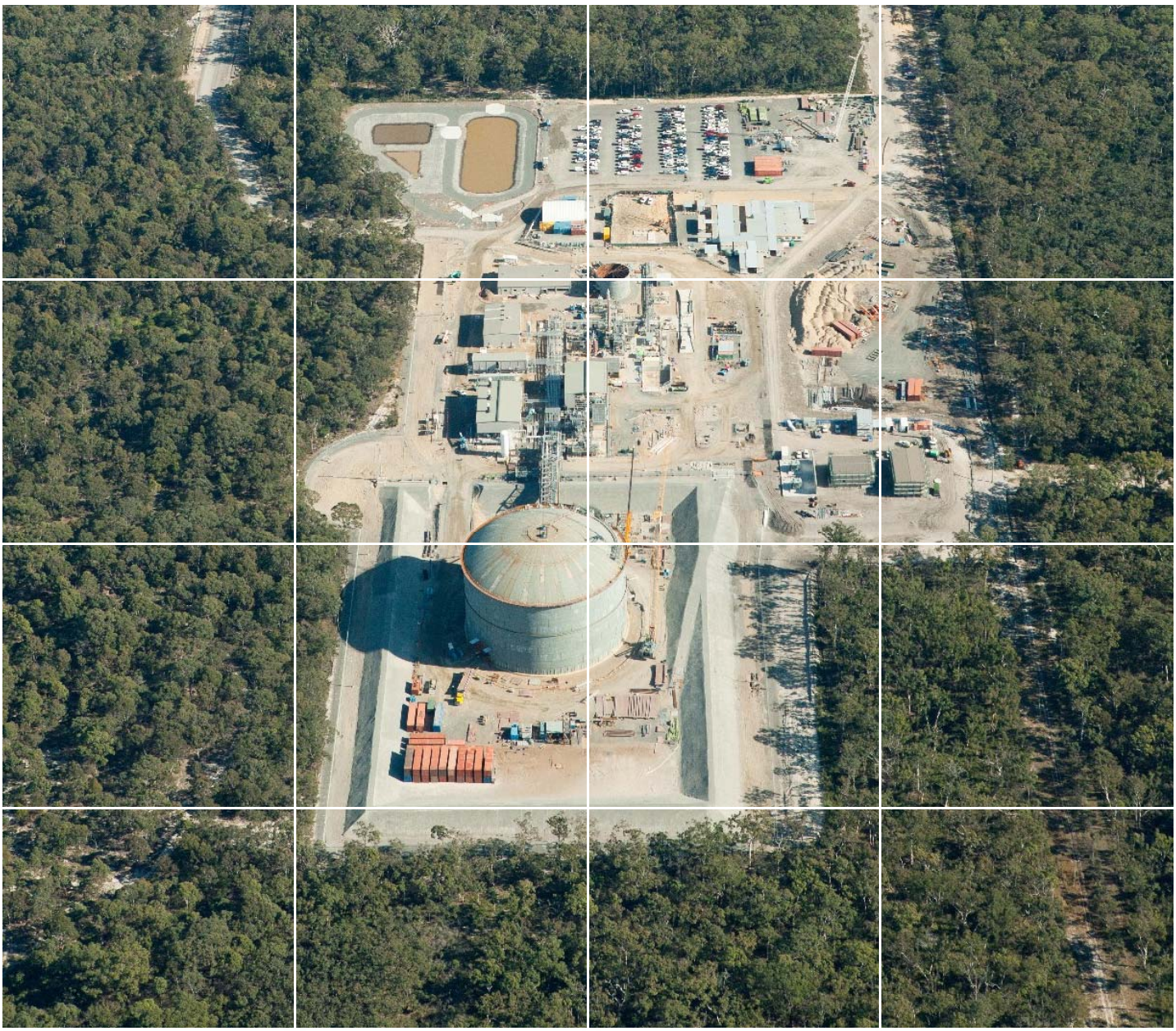

Newcastle Gas Storage Facility

6 Monthly Construction Compliance Report: 28 February 2014 to 27 August 2014

AGL Energy Limited

October 2014

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Newcastle Gas Storage Facility

6 Monthly Construction Compliance Report
28 February 2014 to 27 August 2014

November 2014

Reference: 0169504_4th SMCR

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Newcastle Gas Storage Facility

6 Monthly Construction Compliance Report

28 February to 27 August 2014

AGL Energy Limited

November 2014

Approved by:	*Megan McLachlan*
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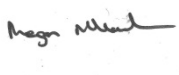
Signed:	
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ABBREVIATIONS

Term	Description
AGL	AGL Energy Limited
ASS	acid sulphate soil
ASSMSP	Acid Sulfate Soil Management Sub Plan
BTEX	benzene, toluene, ethylbenzene and xylenes
C	Conformance
CBI	CBI Constructers Pty Ltd
CEMP	Construction Environment Management Plan
CHM SP	Cultural Heritage Management Sub Plan
CTP	Compliance Tracking Program
DECC	Department of Environment and Climate Change
DG	Dangerous Good
DGMP	Dangerous Goods Management Sub Plan
Downer	Downer EDI
DPI	Department of Primary Industries
DP&I	Department of Planning and Infrastructure
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
ECN	Electrical Connection Works in Primary Project Area
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
ER	Environmental Representative
ERM	Environmental Resources Management Australia Pty Ltd
ERP	Emergency Response Plan
ESCP	Erosion and Sediment Control Plans
HDD	Horizontal Directional Drilling
HPW	High Pressure Pipeline Works
HWC	Hunter Water Corporation
HRBG	Hunter Region Botanical Gardens
IO	Improvement Opportunity
HRS	Hexham Receiving Station
JBS&G	JBS&G (NSW & WA) Pty Ltd
JRS	Jemena Receiving Station
LEP	Local Environmental Plan (LEP)
LNG	Liquid Nitrogen Gas
LOR	level of reporting
LPW	Low Pressure Pipeline Works
Lucas Engineering	Lucas Engineering and Construction Pty Ltd
MCoA	Ministers Conditions of Approval
MEIP	Miscellaneous Environmental Impacts Plan
MSDS	Material Safety Data Sheet
NC-1	Non-conformance Category 1
NC-2	Non-conformance Category 2
NCC	Newcastle City Council
NEPM	National Environment Protection Measure (Assessment of Site Contamination)
NGSF	Newcastle Gas Storage Facility (the 'Project')
NOW	New South Wales Office of Water
NVMSP	Noise and Vibration Management Sub Plan
OCP	Organochlorine pesticides
OEH	Office of Environment and Heritage
OOHW	Out of Hours Work
PAH	Polycyclic aromatic hydrocarbons
PASS	potential acid sulfate soil
PCB	polychlorinated biphenyls

Term	Description
PoEO Act	*Protection of the Environment Operations Act 1997*
PowerServe	PowerServe Pty Ltd
PPA	Primary Project Area
PSC	Port Stephens Council
SDS	Safety Data Sheet
SEPP	State Environmental Planning Policy
SMSP	Soil Management Sub Plan
SoC	Statement of Commitments
SWMS	Safe Work Method Statement
SQE	Safety Quality Environment
SWMSP	Surface Water Management Sub Plan
TDS	total dissolved solids
TPH	total petroleum hydrocarbons
WAL	Water Access Licence

1 INTRODUCTION

1.1 PROJECT DESCRIPTION

AGL Energy Limited (AGL) is developing the Newcastle Gas Storage Facility (NGSF) in Tomago New South Wales to meet AGL's peak gas market requirements over winter and to provide additional security of gas supply during supply disruption events. New South Wales currently has no reliable gas storage capacity.

Construction of the Newcastle Gas Storage Facility (the Project) includes the following components by various contractors:

- Primary Project Area (PPA) - gas storage facility site, access road and utility corridor and gas pipeline access corridor by CBI Constructers Pty Ltd (CBI);
- Primary Project Area – Electrical Connection (ECN) - construction of the main power supply by PowerServe until June 2014 with Downer EDI commencing July 2014 to complete the works;
- High Pressure Pipeline Works (HPW) - construction of the gas pipeline to connect the existing Jemena Gate Station at Hexham with the NGSF by Lucas Engineering;
- Low Pressure Pipeline Works (LPW) - construction of the Low Pressure Pipeline between the NGSF and the existing gas piping system which includes the Tomago Aluminium Company (TAC) Easement and the Main Access Road to the NGSF by Lucas Engineering;
- Jemena Receiving Station (JRS) – connection of pipeline to receiving station located in Hexham by Downer EDI.

1.2 PROJECT APPROVAL

The Minister for Planning approved the Project (11/08788), on 10 May 2012 subject to the conditions recommended in the Director General's report. On 5 February 2013 a modification of the Conditions of Approval (CoA) was issued under Part 75W of the *Environment Planning and Assessment Act 1979* (EP&A Act).

1.3 PURPOSE AND SCOPE OF THIS COMPLIANCE REPORT

This Compliance Report has been developed for the purpose of satisfying CoA B54 (a) which requires "*provisions for periodic reporting of compliance status to the Director General including at least prior to the commencement of construction of the project, prior to the commencement of operation of the project and within two years of operation commencement*".

The Project commenced on 27 August 2012. The Compliance Tracking Program (CTP) for the project requires a review of the compliance status of the project against the CoA and Statement of Commitments (SoC) to be conducted every six months during the construction phase of the project and prior to the commencement of operation. This review is to be subsequently reported to the Director General. As such, and in accordance with the CTP, this construction compliance report covers the construction period from 28 February 2014 to 27 August 2014 inclusive.

As described in the CTP, AGL and the Construction Contractors are all responsible for compliance with the requirements of the CoA however; AGL will be responsible for maintaining the CTP for the Project and for the preparation of the periodic compliance tracking reports. The Construction Contractors will provide input to AGL, as required, to enable AGL to complete these reports.

Table 1.1 identifies information required to satisfy CoA B54 and where this information is presented.

Table 1.1 Compliance Tracking Program Commitments

AGL Commitment	Section of Compliance Report
At six monthly intervals throughout construction, subsequent to reviewing the compliance status of the project as discussed in *Section 2*, AGL will provide the compliance status to the Director-General in the form of a compliance tracking report. AGL will retain responsibility for preparing this report for the duration of the Project. The Construction Contractors will provide input to enable AGL to complete the compliance tracking reports as required. AGL will ensure that compliance tracking reports include the following information:	This report
• Scope of the activities undertaken during the reporting period;	*Section 2*
• Performance of environmental controls that have been implemented;	*Section 3*

• Evaluation of compliance against the CoA and SoCs in tabular format. These tables establish a format for recording compliance and include:
  • Description of the environmental obligation;
  • Timing (i.e. project stage);
  • Responsibility;
  • Compliance status; and
  • Evidence of compliance.
	Section 7 and *Annex A*

• Non-compliances during the reporting period;	*Section 8*

AGL Commitment	Section of Compliance Report
• Outcomes of monitoring undertaken over the reporting period and review of compliance against relevant criteria;	*Section 4*
• Significant outcomes of audits and inspections undertaken during the reporting period; and	*Section 5*
• Substantiated environmental complaints received; AGL's response and current status.	*Section 6*

2 SCOPE OF CONSTRUCTION ACTIVITIES UNDERTAKEN

A summary of the major construction activities undertaken during the reporting period is provided in *Table 2.1*.

Table 2.1 Construction Activities Undertaken during Reporting Period

Month	CBI (PPA)	PowerServe/Downer EDI (ECN)	Downer EDI (JRS)	Lucas Engineering (LPW/HPW)
March 2014	• LNG Tank • Fitting compression bar butts • Welding compression bar • Welding shell to compression bar • Jumping compression bar scaffolds • Installing deck hangers • Welding aluminium deck • Fabrication of roof vent nozzle • Preparation for air raise • Fabrication of aluminium deck platform • Firewater pump & shelter - pour concrete wall/pedestals • Pre-treatment heater foundation • Tank concrete bearing ring • Fitting aluminium deck stiffeners • Pump in wetland area installed and commissioned • Construction on administration buildings continuing	• Ausgrid basement walls • Transformer bays conduits • Ausgrid ground floor slab • Trenching & conduit installation to easement	The Project consisted of three parts. 1. Wyong Gas Chromatograph Works 2. Hexham Gas Chromatograph Works 3. Hexham Connection Works. All of these works included; • Fabrication and installation of under and above ground piping, piping Skids, Structural Steel and Gas Infrastructure Equipment including Valves and Vessels. • Excavations and installation of underground conduits and electrical cabling, concreting, Blockwork erection. • Electrical & Instrumentation installation, including lighting Power, Earthing, Transmitters Electrical Cabinets. • The Fencing, restorations and landscaping of the site.	• HDD 1: Drill crossing and install pipeline, demobilise rig from site • HDD 2: Drill Pilot hole and commence reaming pass. String weld, NDT & coat pipe string • Pipeline Tie-In HDD 1 & HDD 2: Weld, NDT and Joint Coating • Stations: Commence fabrication of pipe spooling • HRS: Construct access track & culvert and commence earthworks

Month	CBI (PPA)	PowerServe/Downer EDI (ECN)	Downer EDI (JRS)	Lucas Engineering (LPW/HPW)
April 2014	• Outer tank roof air raised • Construction of inner tank. • Construction of administration and workshop buildings. • Mechanical equipment installation • Above ground piping installation. • Electrical and instrumentation work • NDT and quality testing	• Construct 2 x Transformer bund footings • Placement of 2 x 15MVA transformers • Erection of Structural Steelwork to Ausgrid building		• HDD 2: Complete reaming pass. String weld, NDT, coat and hydrotest pipe string. • Pipeline Tie-In HDD 1 & HDD 2: Trench & lay • Stations: fabrication of pipe spooling • HRS: Civils, Earthworks, formwork, reinforcing
May 2014	• Fit out tank roof • Construction of inner tank • Construction of administration and workshop buildings • Mechanical equipment installation • Above ground piping installation • Electrical and instrumentation work • NDT and quality testing	• Erection of structural steelwork to AGL building • Installation of cable trays to AGL basement • Installation of roofing system to Ausgrid & AGL building • Installation of hydraulic system to Ausgrid building • Erection of block work blast wall to transformer bays		• HDD 2: Install pipeline and demobilise drill rig. • Pipeline Tie-In HDD 1 & HDD 2: Trench & Lay • Tomago Station: Civils, Earthworks, Formwork, Reinforcing • Stations: Fabrication of Pipe Spooling • HRS: Concrete pour.

June 2014	• Construction of inner tank
	• Construction of administration and workshop buildings
	• Mechanical equipment installation
	• Above ground piping installation
	• Electrical and instrumentation work
	• NDT and quality testing
		• Transition from PowerServe to AGL to Downer EDI
		  • Completion of Roofing works
		  • Completion of ceiling installation
		  • External painting
		Painting of floors within the AGL building
				• Pipeline Gas Plant: Trench & Lay complete
				• Tomago Station: Concrete Pour.
				• HRS: Install HRS Shed structure and roofing.
				• E&I: Installation of cables, cable tray, earthing, instruments, termination of components
				• Pipeline Hydrotesting: Complete cleaning and gauge run. Weld on headers and fill pipeline with water. Conduct Strength and leak testing. Dry pipeline.

Month	CBI (PPA)	PowerServe/Downer EDI (ECN)	Downer EDI (JRS)	Lucas Engineering (LPW/HPW)
July 2014	• Work on buildings near completion • Mechanical equipment installation • Above ground piping installation at pipe rack and liquefaction areas • Electrical and instrumentation work commenced • Tank internal piping commenced • NDT and quality testing	• Installation of doors & door thresholds inc roller doors. • Completion of gutter & downpipes to rooves • Delivery & placement of the ABB 33kV & 6.6kV Switchgear to the AGL building • Painting of floors within the Ausgrid building		• Stations: Fabrication of Pipe Spooling, Painting of Pipe Spooling • HRS: Commence erection and installation of pipe spooling • E&I: Installation of cables, cable tray, earthing, instruments, termination of components
August 2014	• Work on buildings near completion • Mechanical equipment installation • Above ground piping installation at pipe rack and liquefaction areas • Electrical and instrumentation work commenced • Tank internal piping commenced • NDT and quality testing	• Grinding of floors & painting within the Ausgrid building. • Installation of pavement to southern & eastern sides to Ausgrid building • Installation & testing of 33kV Tamco switchboards • Begin construction of unsealed entrance roads.	Not on site	• Stations: Commence erection of pipe spooling onsite, Commence permanent security fencing installation • HRS: Hydrostatic testing and drying of station spooling • E&I: Installation of cables, cable tray, earthing, instruments, termination of components

3 ENVIRONMENTAL CONTROLS

3.1 SUMMARY OF ENVIRONMENTAL CONTROLS

The environmental controls implemented by CBI, PowerServe/Downer EDI (ECN), Lucas Engineering and Downer EDI (JRS) during the reporting period and their effectiveness are listed in *Table 3.1* to *3.4* respectively.

Table 3.1 CBI (PPA) Environmental Controls Implemented

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
General	• Construction Environment Management Plan (CEMP) implemented and complied with. • All approvals and licences obtained and/maintained. • Works undertaken in accordance with licence requirements. • Environmental awareness, inductions and CEMP requirement training undertaken. • Incidents managed in accordance with management procedures. • Works conducted in a manner so as to not cause community complaints. • Qualified and experienced environmental personnel on-site full-time.	• Checks against implementation of CEMP completed during Environmental Representative (ER) inspections with minor issues noted and closed out within a week. • Water Access Licence surrender completed • EPL current and requirements met. Annual return completed. • Environmental awareness training in the form of inductions, toolboxes and specific issue training carried out during the reporting period. • Incidents involving minor leaks and spills occurred during the reporting period and were managed as per license conditions and procedures. • No complaints received from the community during the reporting period. • The full time Environmental Manager conducted daily inspections.
Groundwater Monitoring	• Appropriate vehicle maintenance checks and spill containment equipment adopted to mitigate potential risks of groundwater contamination. • AGL groundwater monitoring bores protected during construction. • All amenities wastewater collected and stored before transporting off-site for treatment or disposal. • Install groundwater monitoring piezometer downstream of the holding tank for wastewater and regularly sampled for pathogens and nutrients. • Construction water supplies sourced from an authorised and reliable supply. • Test and treat water generated by dewatering of trenches or excavations as required, and infiltrate back into the groundwater table at designated infiltration areas, or alternatively transport offsite to a licensed disposal facility.	• Plant and vehicles inspected before entering site for leaks, weeds and appropriate maintenance. • Daily prestart checks completed on all vehicles which included check for leaks. • Spill kit available on plant including stationary spill kits located in maintenance areas. • Groundwater bores flagged to prevent accidental damage in field. • Existing groundwater piezometers (MW5 and MW15) being used monitor for pathogens and nutrients in groundwater down gradient of the wastewater holding tank. • Amenities wastewater collected by licensed contractor and disposed to HWC sewage treatment plant. • Water sourced from HWC mains extension potable water holding tank at temporary site compound. • Rain water collected in sumps (holding ponds) and pumped to surface locally.

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
Surface Water	• Maintain dedicated refuelling and chemical storage areas. • Test and treat water generated by dewatering of trenches or excavations if required, and infiltrate back into the groundwater table at designated infiltration areas or alternatively transport offsite to a licenced disposal facility. • Regularly inspect erosion control structures and bunded areas. • Ensure silt fences are in a vertical position and securely fixed and remove sediment or residue behind sediment control barriers. • Store potentially contaminating chemicals in bunded areas capable of capturing 110% of the maximum spill volume. • Construct suitably lined sediment control ponds down-slope of construction work areas. • Implement hydrostatic test water management measures in consultation with HWC and NOW to determine and address requirements for testing and treating of this hydrostatic test water prior to re-use or disposal.	• Plant and equipment refuelling carried out by specialist refuelling contractors for large plant. • Smaller plant refuelled using 500L mobile fuel pod. • Dedicated refuelling area operational with controls in place. • Spill kits are carried on all light vehicles and machinery. • Spill kit at stationary refuelling area. • Rain water collected in sumps (holding ponds) and pumped to surface locally after testing. • Environmental Manager conducts inspections after rain events. • Sediment accumulated behind silt fences is removed after rain events. • Purpose built bunded chemical stores is in use in all areas. • Lined holding pond construction complete. First water collected in pond from February rain event and water released as per SWMP. • AGL developed plans in consultation with CBI, HWC, NOW and EPA to manage hydrotest water. • Preparation for tank hydrotest commenced.
Cultural Heritage	• Identified Aboriginal or Heritage sites identified on constraints maps with relevant protection measures detailed in the sub plan. • Site personnel made aware of heritage issues during toolbox talks and inductions. • Aboriginal cultural heritage artefacts stored in a Temporary Keeping Place on site.	• Previously inspected heritage areas are now covered by construction works. • Site personnel are made aware of the artefact discovery area through the site induction and subsequent tool box talks. • Artefacts are stored in the CBI site office located in the Primary Project Area.
Vegetation Rehabilitation	• Any fencing installed designed so that it is not harmful to wildlife. Fence design considers materials used (non-barbed wire), height of strands and permeability to ensure they are wildlife friendly. • Windrows of mulch kept as low as possible and have a large surface area, which will maximise the retention of a living seed bank and any associated microbes. • Weed control achieved by a combination of slashing, mowing and herbicide application.	• Three strand rural fence type installed on outer perimeter. • Chain wire fence installed on inner perimeter with locking gates. • Mulched material stockpiled along Gas Access Track for use in rehabilitation. Stockpiles are no higher than 2 metres. • No weed control spraying took place during the reporting period. • No weeds noted on stockpiles within the CB&I project area. • Dianella seedlings were planted on the Main Access Road in July 2014.

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
	• During-construction, stockpiles inspected for the presence of weed species which may require herbicide application to prevent the contamination of top soil which could increase the risk of weed infestation following topsoil re-spreading.	
Flora and Fauna	• Trenches and excavations monitored daily for trapped animals such as reptiles and small ground-dwelling mammals. • Open excavations and trenches inspected for fauna ramps to allow animals that have fallen into the trench to make their way out. • Vegetation trimmed where possible rather than removing it. • Flagging tape, parawebbing or fencing erected to mark "no-go zones" to ensure areas to be protected are clearly defined, identified and avoided until permanent fencing installed.	• No animals were found trapped in trenches or excavations during daily inspections. • Fauna ramps present in open excavations and trenches to allow adequate egress for fauna. • No trimming of vegetation was required during the reporting period. • CBI's construction area is clearly defined by permanent perimeter fencing – bunting and temporary fencing now removed.
Soil Management	• Stockpiles of topsoil (which are likely to contain a viable seed bank) to have a maximum height of 1m. • Stockpiles covered/vegetated where material remained exposed for a long period of time. • Stockpiles placed so that they do not block waterways. • Soils imported to site must be either VENM or be a material that has a Site Specific Exemption approved by EPA. • Soil that is to be disposed to landfill must be assessed in accordance with the NSW DECCW (2009) Waste Classification Guidelines. • Site staff to be trained to identify potentially contaminated soil, suspect imported fill or Acid Sulfate Soil (ASS). • In the event contaminated soil is discovered during excavation, work is to cease until the appropriate management has been undertaken.	• All topsoil stockpiles are at or below 1m in height. • No further topsoil stockpiles generated during reporting period. • Topsoil stockpiles were hydromulched. • Stockpiles placed away from waterways. • No VENM or other material was imported during the reporting period • No soil was removed to landfill during the reporting period. • There were no unexpected finds during the reporting period.
Acid Sulfate Soil	• Excavated ASS stored in conditions that simulate its natural state, or treated and stored away from water bodies and drainage lines.	• There were no activities requiring the storage of ASS during the reporting period.

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
Noise and Vibration	• Noise generating construction activities restricted to daytime hours (7.00 a.m. to 6.00 p.m. Monday to Friday and 8.00 a.m. to 1.00 p.m. Saturday). In special circumstances, if noise generating evening or night work is required, a consultation process will be undertaken to ensure noise impacts can be adequately controlled. • High noise generating activities scheduled for less sensitive times of the day (including periodic respite breaks from noise). • Potential noise receptors consulted (particularly those within 500 m of the gas pipeline works) about the nature of the noise emissions and avoidance and mitigation practices to be adopted. Complaints and feedback and will be recorded and addressed where practical. • Noise emissions monitored during construction and operations to ensure equipment is meeting noise certification and criteria requirements and detect any faulty or damaged equipment. • Spot check construction noise on the property boundary of Hunter Region Botanic Gardens (HRBG).	• Two inaudible out of hours work notifications were approved for day works. • Night works designated as low risk audible out of hours work were conducted Monday to Sunday. • No complaints were received as a result of out of hours work. • There were no activities considered to be high noise generating in normal working hours during the reporting period. • CBI notified AGL of any out of hours work during the reporting period. • AGL consulted potential noise receptors at their discretion. • Noise check completed during inaudible out of hours work. • No noisy or faulty equipment reported. • Plant noise check checks conducted. • Noise monitoring took place on the site and HRBG boundary during the reporting period.
Traffic	• Speed limits to be observed along routes to and from the site and within the site. • Inform transport operators of details of traffic routes for heavy vehicles, including any necessary route or timing restriction for oversized loads. • Convey expected behavioural requirements for vehicle drivers travelling to and from the site and within the site.	• Heavy vehicle traffic following designated route from Pacific Highway to Old Punt Road. • Speed limit signs posted within the project footprint working effectively. • Workers involved in transport informed of restricted traffic routes in contract agreements and during site induction.
Air Quality	• Discussion on dust sources, impacts and mitigation measures will be incorporated into Project Induction and ongoing Toolbox Talks. • Water sprays and/or water carts used as required for dampening stockpiles, cleared areas and other exposed surfaces to control dust generation. • Construction speed limits established and enforced to ensure dust generation from vehicle movements are minimised. • Loads covered on public roads.	• Project inductions and tool box talks include dust mitigation measures. • Water carts in use daily to control dust during dry periods. • Water trucks spraying roads regularly. • Posted site speed limit is 10kph. • All loads are covered entering and leaving site where practical. • There were no issues with excessive exhaust emissions during the reporting period. • All plant undergoes a safety and environmental inspection before use on site.

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
	• Construction plant, vehicles and machinery maintained to minimise exhaust emissions. Records of maintenance will be kept for all plant, vehicles and machinery used on the project.	
Waste Management	• Recyclable plastics placed into a recycling skip bin for collection by a recycling contractor. • Inductions to construction personnel outline measures on how to deal with suspected contaminated soil. • Waste stored in a protected area away from vermin and inclement weather. • Non-recyclable plastic and domestic waste placed into skip bins for collection by a waste contractor. • Concrete mixers and pump trucks are washed at the site in the designated concrete washout area. • Cardboard boxes placed in a paper recycling skip bin for collection by a recycling contractor. • A waste register to be maintained. • If the material appears to contain asbestos or other potentially hazardous materials, it is covered and access to the material restricted. • The construction site is fenced and locked to prevent access by others. • If any evidence of illegal dumping of wastes on the Project area is observed the dumped material will be removed immediately. • Monitor diesel usage. • Waste tracking to be completed.	• Collection of recyclables plastics has been completed. • Unexpected find included in environmental induction. • Waste adequately stored in approved sealed containers in all areas. • Recyclable and general waste is segregated correctly. • Concrete washout skips were used effectively during the reporting period. • One instance of washout procedure not followed recorded. • The majority of cardboard generated on site is recycled. • Waste is recorded in a register based on invoices from waste removal contractors. • No potentially hazardous material found on site during the reporting period. • Security gates in place at entrance to the Main Access Road. • Security patrols the site on a 24 hour basis. • Security fencing around the main site compound is locked at the end of shift. • There was no evidence of illegal dumping during the reporting period.
Dangerous Goods	• Dangerous goods containment facilities inspected regularly to ensure their integrity. • Hazardous materials stored according to their safety data sheet (SDS). • Received goods are stored immediately and not left on site unattended.	• All DG containers have floor bunding and signage to indicate contents. • CBI and subcontractors segregate chemicals according to MSDS. • All goods received were stored immediately.

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
Bush Fire	• RFS web site regularly monitored during high fire danger days. • Regularly inspect to ensure fire trails crossing access roads are passable by firefighting equipment.	• There were periods of high fire danger and total fire ban during the reporting period. • RFS evacuated CBI workers from site as out of control bushfires on northern, eastern and southern boundaries threatened site assets on 17 October 2013. • Fire trail access ramps passable by fire services. • Gates to fire trails are usually locked but have been opened to allow fire crews access to bushfires. This is being managed by an AGL representative. • Three wire fence is cut near access gates to the Primary Construction Area.
Flood	• Potential for flooding monitored by observing weather reports and river levels during potential flood events.	• SES website monitored regularly. • Minor flooding noted on site after rain event. • 167.4mm rainfall recorded during March. • 157.6mm recorded on 3 March.
Pollution Prevention	• Regularly inspect for spills and leaks. • Construction equipment inspected daily for leaks. • Construction equipment is parked in designated areas to limit area of risk of soil contamination due to leaks. • Spill kits inspected to ensure they are supplied and maintained on site where chemicals are stored or used. • Spills are cleaned up immediately.	• Minor leaks from private vehicles noted in carpark areas. • Construction equipment checked for leaks as part of prestart inspection. • Daily and weekly checks ensure leaks are detected and repaired. • Mobile construction plant parked in designated areas at the end of the day. • No leaks noted in plant parking areas. • Stationary spill kits available in areas where there is potential for spillage. • Spill kits are checked and restocked monthly. • CBI and their subcontractors report and clean up spillage immediately as required.

Table 3.2 PowerServe/Downer EDI (ECN) Environmental Controls Implemented

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
General	• Approved Construction Environmental Management Plan (CEMP) implemented	• Prescribed inspections undertaken as per CEMP sub plans • All workers including subcontractors inducted into CEMP requirements
Groundwater Monitoring	• All amenities wastewater will be collected and stored before transporting off-site for treatment or disposal • Provide sedimentation treatment for all surface runoff from disturbed areas. • Spill kits will be supplied and maintained on site where chemicals are stored or used. Spills will be contained immediately. • Maintain refuelling equipment, chemical storage, and equipment storage areas • Appropriate vehicle maintenance checks and spill containment equipment will be adopted to mitigate potential risks of groundwater contamination.	• Amenities wastewater transported by licensed operators and disposed of at HWC Sewage treatment plant • Sediment erosion control plans implemented and updated as conditions required • Spill kit provided for facilities and mobile plant • Refuelling equipment and chemicals stored in bunded areas • Mobile plant and equipment maintenance registers kept and maintained
Surface Water	• Construction employees, including contractors are required to attend an induction prior to commencing work at each site • Maintain dedicated refuelling and chemical storage areas. • Restrict traffic to defined roads • Source water from a reliable off site location until onsite water is available • Amenities wastewater will be removed from secure storage to a license offsite facility • Install velocity reduction devices, such as sandbags, in drains and sloped drains to reduce erosion.	• All workers including subcontractors inducted into CEMP requirements. • Refuelling equipment and chemicals stored in bunded areas • Specific induction for delivery drivers developed and implemented • Site water sourced from HWC stand pipe • Amenities wastewater transported by licensed operator and disposed of at HWC Sewage treatment plant • High water level alarm installed in amenities waste water tank • Sand bags installed in out fall diversion drains
Cultural Heritage	• All project personnel, subcontractors and consultants will receive training in both the Contractor's and their personal environmental obligations during the inductions and toolbox talks.	• All workers including subcontractors inducted into CEMP requirements • Specific tool box induction outlining requirements associated with excavation works • Aboriginal heritage component of training has been provided in accordance with the Aboriginal and Cultural Heritage Education Program

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
Vegetation Rehabilitation	• The induction program shall inform all employees and contractors about designated work areas, access routes and site procedures. • Allow an appropriate buffer distance for sediment and erosion control between any construction activity and remnant native vegetation, where practicable • Ensure vehicle and equipment parking areas and stockpile areas are identified and sited to avoid areas containing ecological value. • Erect flagging tape to mark 'no-go' zones to ensure areas to be protected are clearly defined, identified and avoided •	• All workers including subcontractors inducted into CEMP requirements • Sediment fencing installed in accordance with sediment erosion control plan • Designated parking areas • Traffic movement plan • Flagging tape erected along access routes
Flora and Fauna	• Site Induction shall inform all site personnel about flora and fauna management measures and the designated work areas and access routes. • Ensure all site personnel are made aware of the meaning of temporary fencing or other delineation methods (e.g. flagging tape or parawebbing) marking out "no-go areas" to construction staff and vehicles. • A 'carry-in, carry-out' policy will be enforced regarding rubbish and waste materials generated on site to avoid waste materials (including cigarette butts) entering adjacent vegetation and waterways or attracting vermin to site. • All open trenches will have escape ramps installed and be checked daily for trapped animals, and those found will be removed, recorded and relocated to appropriate areas away from construction activities by qualified personnel.	• All workers including subcontractors inducted into CEMP requirements • Flagging tape erected along and access routes and sediment fencing installed in easement to delineate "no-go areas" • General solid waste bins located across site • Site cleanliness checked on daily site closure checklist • Escape ramps installed in all trenches left over night
Soil Management	• Stripped material or stockpiles will be formed into small windrows adjacent to the disturbance areas in preparation for replacement during the post development stage. • Ordinarily stockpiles shall have a maximum height of 3m and be battered to a maximum slope of 2(H):1(V). • Minimise duration of subsoil (including stockpiles) exposure to weather.	• Stripped material formed into small windrows adjacent to the trenching and replaced as the top layer, lower layers separated and replaced into bottom of trench • Stock piles limited to less than 3m with a maximum batter of 2:1 • Excavated material from trenching operations returned to trench within 2 days • Sediment fencing installed in accordance with sediment erosion control plan

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
	• Silt fences as appropriate shall be installed when required in order to minimise sediment movement. • Spoil from trenches shall be temporarily placed adjacent to the trench on the upslope side of the trench where possible. • Topsoil and fill materials should be stockpiled separately from each other, and from underlying subsoils • The trench should be backfilled as soon as possible using the excavated spoil. The spoil should be placed back, with the subsoils at the base, and topsoil at the surface.	
Acid Sulfate Soil	• A field screening test using hydrogen peroxide (H_2O_2) should be performed regularly on excavated soils in areas where ASS or PASS is anticipated, or on suspect soils.	• Field screening test using hydrogen peroxide (H_2O_2) undertaken (No PASS indicated)
Noise and Vibration	• Construction works associated with the Project will only be undertaken during the following hours: a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive; b) 8:00 am to 1:00 pm on Saturdays; and c) at no time on Sundays or public holidays. • Where possible, plant and equipment known to emit noise strongly will be oriented in one direction so that the noise is directed away from noise sensitive areas. • Trucks will not queue up outside residential properties. No trucks will arrive on site or be permitted to queue near sensitive receivers prior to the 7.00 am start time unless required by road safety considerations	• Work is scheduled to be only undertaken between the hours of 7:00 am to 6:00 pm, Mondays to Fridays, 8:00 am to 1:00 pm on Saturdays and at no time on Sundays or public holidays • Deliveries are scheduled in such a way as to avoid queuing

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
Air Quality	• Construction works will be undertaken in a manner that minimises dust emissions associated with construction works, including wind-blown and traffic-generated dust • Water sprays and/or water carts will be used as required for dampening stockpiles, cleared areas and other exposed surfaces to control dust generation. • Materials deliveries will be organised in such a way as to avoid excessive truck queuing and idling. • Construction plant, vehicles and machinery will be maintained to minimise exhaust emissions. Records of maintenance will be kept for all plant, vehicles and machinery used on the project.	• Speed limits to a maximum of 20 km/hr on the gas access track are monitored and enforced • Specific induction for delivery drivers developed and implemented • Water cart used along access tracks and across site • Deliveries are scheduled in such a way as to avoid queuing • Mobile plant and equipment maintenance registers kept and maintained
Waste Management	• Ensure wastewater and sewage is removed from site by an EPA-licensed operator for treatment at an EPA-approved wastewater treatment facility. • Inductions to construction personnel outline measures on how to deal with suspected contaminated soil. • The volume of material required will be calculated carefully to avoid over-ordering of materials. Where materials have been over-ordered, the supplier will be contacted to see if excess materials can be returned. • Concrete is required to be removed from site, and can be recycled at a recycling facility.	• Amenities wastewater transported by licensed operator and disposed of at HWC Sewage treatment plant • All workers including subcontractors inducted into CEMP requirements relating to suspected contaminated soil • Bill of materials has been compiled for the works with any excess materials returned to the PowerServe central store • Excess concrete is stockpiled awaiting disposal at concrete recycler
Traffic	• Unless otherwise designated, speed limits will be: Construction Site - 10 km/h; Pipeline Access Corridor – 25 km/h; and Main Access Road – 40 km/h. • Adhere to posted speed limits to ensure protection to fauna and livestock	• Speed limits to a maximum of 20 km/hr on the gas access track are monitored and enforced • Specific induction for delivery drivers developed and implemented

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
Dangerous Goods	• All oils, potentially hazardous liquids and chemicals will be stored in bunded areas. • Spill kits will be supplied and maintained on site where chemicals are stored or used. • Maintain refuelling equipment, chemical storage, and equipment storage areas. • All dangerous goods and/ or hazardous materials stored on site will be entered on the Chemical Manifest, including a register, risk assessment, and MSDS's. • Job Safety and Environment Analysis will incorporate storage and handling of dangerous goods and/or hazardous materials and reference the relevant MSDS.	• Oils, potentially hazardous liquids and chemicals are stored in bunded areas • Spill kit provided for facilities and mobile plant • A chemical manifest, including a register, risk assessments, and SDS's is maintained for the site • Safe work method statements reference SDS requirements for storage and handling
Bush Fire	• Site personnel will report fires within the Project Area • Vehicles will be regularly inspected and cleared of vegetation build-up • Fire equipment will be checked and tested regularly to ensure they are in good working order and will be replaced or repaired where necessary • A Hot Work Permit will be required for any activity involving heat, sparks or flames	• There have been no bush fire incidents during the reporting period • There were no fires within the Project Area to report • Vehicles are regularly inspected • A register is maintained of fire extinguishers are inspected regularly • Hot work permits are issued for activities involving heat, sparks or flames
Flood	• Potential for flooding monitored by observing weather reports and river levels during potential flood events	• Bureau of Metrology website monitored regularly
Spill Incident Response	• Spill kits are kept on mobile plant • Spill kits kept onsite adjacent to where chemicals are stored and used onsite • Site inspections are undertaken for spills and leaks • Spill kits are inspected regularly	• There have been no spills on site during reporting period • Inspections have occurred on a regular basis • Spill kits have been checked and maintained

Table 3.3 Lucas Engineering (LPW and HPW) Environmental Controls Implemented

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
General	• CEMP implemented and complied with. • All approvals and licences obtained and/maintained. • Works undertaken in accordance with licence requirements. • Environmental awareness, inductions and CEMP requirement training undertaken. • Incidents managed in accordance with management procedures. • Works conducted in a manner so as to not cause community complaints. • Qualified and experienced environmental personnel on-site full-time.	• Checks against implementation of CEMP completed during Environmental Representative (ER) inspections with minor issues noted and closed out within a week. • Environmental awareness training in the form of inductions, toolboxes and specific issue training carried out during the reporting period. • Incidents managed in accordance with procedures including notification to AGL, Department of Planning and Infrastructure (DP&I), Hunter Water Corporation, Port Stephens Council, ER and EPA as required.
Groundwater Monitoring	• Re-insert groundwater moved during wet laying operations back into trench. • Appropriate vehicle maintenance checks and spill containment equipment adopted to mitigate potential risks of groundwater contamination. • Construction water supplies sourced from an authorised and reliable supply. • Test and treat water generated by dewatering of trenches or excavations as required, and infiltrate back into the groundwater table at designated infiltration areas, or alternatively transport offsite to a licensed disposal facility.	• Vehicles inspected before entering site for leaks, weeds and appropriate maintenance • Daily prestart checks completed on all vehicles which include check for leaks. • Spill kit available on plant
Surface Water	• Sediment fencing used across the site • Test and treat water generated by dewatering of trenches or excavations if required, and infiltrate back into the groundwater table at designated infiltration areas or alternatively transport offsite to a licenced disposal facility. • Construction water supplies sourced from an authorised and reliable supply • Regularly inspect erosion control structures and bunded areas. • Ensure silt fences are in a vertical position and securely fixed and remove sediment or residue behind sediment control barriers.	• Spill kits are carried on all light vehicles and machinery • AGL Environmental Advisor conducts daily and weekly inspection of sediment controls and bunded areas including frequent inspections with the Environmental Manager. • Sediment accumulated behind silt fences is regularly removed. • Purpose built bunded chemical stores are in use in all areas.

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
	• Store potentially contaminating chemicals in bunded areas capable of capturing 110% of the maximum spill volume.	
Cultural Heritage	• Lucas Engineering site not in vicinity of expected cultural heritage finds.	• No Cultural Heritage finds to date
Vegetation Rehabilitation	• Stripped material or stockpiles formed into small windrows adjacent to the disturbance areas in preparation for replacement during the post development stage. • Windrows of mulch kept as low as possible and have a large surface area, which will maximise the retention of a living seed bank and any associated microbes. • Where possible, hollow logs and dead timber stockpiled for future use. Project Ecologist determined the suitability of logs to be retained. • During-construction, stockpiles inspected for the presence of weed species which may require herbicide application to prevent the contamination of top soil which could increase the risk of weed infestation following topsoil re-spreading.	• Weed control achieved by a combination of slashing, mowing and herbicide application. • Soil/mulch re-spread on Gas Access Track as requested by AGL
Flora and Fauna	• Trenches and excavations monitored daily for trapped animals such as reptiles and small ground-dwelling mammals. • Open excavations and trenches inspected for fauna ramps to allow animals that have fallen into the trench to make their way out. • Vegetation trimmed where possible rather than removing it. • Flagging tape, parawebbing or fencing erected to mark "no-go zones" to ensure areas to be protected are clearly defined, identified and avoided.	• No incidents were recorded involving flora and fauna • No animals were found trapped in trenches or excavations during daily inspections.

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
Soil Management	• Topsoil and subsoil stored separately • Soil/mulch re-spread on Gas Access Track as requested by AGL • Stockpiles of topsoil (which are likely to contain a viable seed bank) to have a maximum height of 1 m. • Stockpiles covered/vegetated where material remained exposed for a long period of time. • Stockpiles placed so that they do not block waterways. • In the event contaminated soil is discovered during excavation, work is to cease until the appropriate management has been undertaken.	• All topsoil stockpiles are at or below 1m in height. • Stockpiles placed away from waterways. • There were no unexpected finds during the reporting period.
Acid Sulfate Soil	• Excavated ASS treated using agricultural lime with machinery sufficient to perform adequate mixing, where practicable. • In areas where ASS is exposed, bunding to be installed to prevent leachate entering the wider environment. • Daily visual inspections • Samples taken when required • Trench backfilled within 24 hours	• Excavated ASS stored in conditions that simulate its natural state, or treated and stored away from water bodies and drainage lines to limit potential for impacts.
Noise and Vibration	• Sound attenuating enclosures used on HDD equipment • HDD 2 site designed to limit noise received at local caravan park • Noise monitoring conducted prior to conducting works to ensure limited impact to local sensitive receivers. • Potential noise receptors consulted (particularly those within 500 m of the gas pipeline works) about the nature of the noise emissions and avoidance and mitigation practices to be adopted. Complaints and feedback and will be recorded and addressed where practical. • Noise emissions monitored during construction and operations to ensure equipment is meeting noise certification and criteria requirements and detect any faulty or damaged equipment.	• Noise generating construction activities restricted to daytime hours (7.00 a.m. to 6.00 p.m. Monday to Friday and 8.00 a.m. to 1.00 p.m. Saturday). In special circumstances, if noise generating evening or night work is required, a consultation process will be undertaken to ensure noise impacts can be adequately controlled. • High noise generating activities scheduled for less sensitive times of the day (including periodic respite breaks from noise).

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
Air Quality	• Dust control measures include use of water cart • Plant turned off when not in use • Loads covered on public roads. • Plant maintained in accordance with manufacturer specifications to minimise exhaust emissions • Disturbed areas stabilised as soon as practicable after completion of construction works. • Construction speed limits established and enforced to ensure dust generation from vehicle movements are minimised.	• Trucks followed posted site speed limits. • Project inductions and tool box talks included dust mitigation measures. • Water carts in use to control dust during dry periods. • There were no issues with excessive exhaust emissions during the reporting period.
Waste Management	• Waste tracking register maintained and updated • Waste Classification conducted • Waste disposal dockets maintained and archived • Recyclable plastics placed into a recycling skip bin for collection by a recycling contractor. • Inductions to construction personnel outline measures on how to deal with suspected contaminated soil. • Waste stored in a protected area away from vermin and inclement weather. • Non-recyclable plastic and domestic waste placed into skip bins for collection by a waste contractor. • Cardboard boxes placed in a paper recycling skip bin for collection by a recycling contractor. • If the material appears to contain asbestos or other potentially hazardous materials, it is covered and access to the material restricted. • If any evidence of illegal dumping of wastes on the Project area is observed the dumped material will be removed immediately.	• Recyclables are generally correctly segregated. • Waste is segregated and disposed of appropriately via licensed contractors or directly to licensed landfills. • Waste adequately stored in approved sealed containers in all areas. • Waste register maintained for all wastes generated by the Project. • No potentially hazardous material found on site during the reporting period. • There was no evidence of illegal dumping during the reporting period.
Traffic	• Traffic management utilised when working near or on roads • Signs maintained • Barriers between road and worksite installed and maintained • Speed limits to be observed along routes to and from the site and within the site.	• Speed limit signs posted within the project footprint working effectively. • Workers involved in transport informed of restricted traffic routes in contract agreements and during site induction.

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
	• Convey expected behavioural requirements for vehicle drivers travelling to and from the site and within the site.	
Dangerous Goods	• Hazardous Materials register maintained and updated to include volumes • Hazardous materials onsite located in DG container • Dangerous goods containment facilities inspected regularly to ensure their integrity.	• All DG containers have floor bunding and signage to indicate contents. • Hazardous materials stored according to their MSDS. • All goods received were stored immediately.
Bush Fire	• Water trailer positioned nearby to welding locations • RFS web site regularly monitored during high fire danger days.	• There were periods of high fire danger and total fire ban during the reporting period. • Fire trail access ramps passable by fire services. • Gates to fire trails are usually locked but have been opened to allow fire crews access to bushfires. This is being managed by an AGL representative. • Three wire fence is cut near access gates to the Primary Construction Area.
Flood	• Potential for flooding monitored by observing weather reports and river levels during potential flood events.	• Monitoring of conditions considered effective in planning to manage forecast inclement weather events
Spill Incident Response	• Spill Kits installed in mobile plant. • Bunds installed near fuel cells • Toolbox talks conducted on spill response • Regularly inspect for spills and leaks. • Construction equipment inspected daily for leaks. • Construction equipment is parked in designated areas to limit area of risk of soil contamination due to leaks. • Spill kits inspected to ensure they are supplied and maintained on site where chemicals are stored or used. • Spills are cleaned up immediately.	• Minor spill during the reporting period • Construction equipment checked daily at prestart. • Mobile construction plant parked in designated areas at the end of the day. • Mobile plant stocked with spill kits. • Stationary spill kits stocked and well maintained in all areas.

Table 3.4 Downer EDI (JRS) Environmental Controls Implemented

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
General	• Construction Environment Management Plan (CEMP) 401020-03390-HP-EN-PLN-002-CEMP implemented and complied with. • Works undertaken in accordance with licence requirements • Environmental awareness, inductions and CEMP requirement training undertaken. • Incidents managed in accordance with management procedures. • Works conducted in a manner so as to not cause community complaints. • Weekly Environmental Inspection Check List Temporary site – DA-ZH-F116.9 • External Site Inspection carried out by ERM	• Weekly Environmental Inspection Check List Temporary site – DA-ZH-F116.9 completed on a weekly basis. This process is carried out by the Site Supervisor • Inductions carried out for all persons entering site to carry out work with a section relating to Environment. • Visitors escorted by Inducted personnel • No Community complaints recorded • Environmental training conducted using the process of Toolbox talks, Prestart Talks, Site Inductions and specific training carried when minor issues were raised.
Groundwater Monitoring	• Appropriate vehicle maintenance checks completed and Spill containment equipment available to control any possible groundwater contamination. • Amenities wash water collected and stored and removed from site by Licenced operator. • Construction water supplies source from reliable and approved supply • Dewatering of trenches or excavations to follow dewatering procedure and infiltrate back into the ground water table at designated areas. Alternatively untreated water would be contained and transported off site through a Licenced operator. • Dewatering Permit DA-ZH-FM064.1 • Weekly Environmental Inspection Check List Temporary site – DA-ZH-F116.9	• Vehicles inspected before every use. To check for Leaks and appropriate maintenance. • Amenities wash water collected by Licenced contractor 'WasteChem' • Dewatering Permit DA-ZH-FM064.1 completed Daily for dewatering process, also following the guidelines referred in DA-ZH-ST064 Soil and Water Management Standard • No Ground Water Contamination recorded. • Weekly Environmental Inspection Check List Temporary site – DA-ZH-F116.9 completed on a weekly basis. This process is carried out by the Site Supervisor

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
Surface Water	• Bunded areas and erosion control structure adequately maintained on a daily basis. • Water sourced from a reliable location situated onsite. • Chemical substances and hazardous materials store correctly on site. 110% of the maximum spill volume. • Silt fencing erected correctly and maintained, residue to be removed if build up occurs. • Weekly Environmental Inspection Check List Temporary site – DA-ZH-F116.9 • External Site Inspection carried out by ERM	• All areas maintained daily with adequate erosion controls. • Spill Kit available on site for any spills. • Designated refuelling point established for refuelling plant or equipment. • Chemical container onsite for storage of hazardous materials. • Potable water obtained by established water source at site building. • Build-up of materials on sediment fencing removed accordingly. • Weekly Environmental Inspection Check List Temporary site – DA-ZH-F116.9 completed on a weekly basis. This process is carried out by the Site Supervisor
Cultural Heritage	• CEMP covers off on cultural heritage requirements. Referring to the Worley Parsons Cultural Heritage Management Sub Plan Section 1.2 • Site Induction contains material to communicate and make aware of processes to be followed when working around Cultural Heritage sensitive areas. • Weekly Environmental Inspection Check List Temporary site – DA-ZH-F116.9	• Site contained no Cultural Heritage Artefacts due to the land being reclaimed land. Communication and an understanding of requirements were met through the Site Induction Process • Weekly Environmental Inspection Check List Temporary site – DA-ZH-F116.9 completed on a weekly basis. This process is carried out by the Site Supervisor
Vegetation Rehabilitation	• During construction, stockpiles inspected for the presence of weed species which may require herbicide application to prevent the contamination of top soil. • Weekly Environmental Inspection Check List Temporary site – DA-ZH-F116.9 • External Site Inspection carried out by ERM	• No herbicide spraying took place during the construction period. • Weekly inspections carried out to identify potential Environmental impacts and Control raised issues
Flora and Fauna	• Weekly Environmental Inspection Check List Temporary site – DA-ZH-F116.9 • External Site Inspection carried out by ERM	• Weekly Environmental Inspection Check List Temporary site – DA-ZH-F116.9 completed on a weekly basis. This process is carried out by the Site Supervisor

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
Soil Management	• Weekly Environmental Inspection Check List Temporary site – DA-ZH-F116.9 • External Site Inspection carried out by ERM • Stockpiles to have maximum height of 1m. • Stockpiles placed so that they do not block waterways • Staff to be trained to identify potential contamination soil, Suspected Acid Sulphate Materials (ASS)	• Potential Acid Sulphate materials – Excavated materials contained in metal skip bins for testing before removal from site. • Enviropacific contracted to test soil material; with negative results with contaminants in the soil • Constant inspection of stockpiles to make sure impact is minimised to waterways
Acid Sulphate Soil	• Staff to be trained to identify potential contamination soil, Suspected Acid Sulphate Materials (ASS)	• Potential Acid Sulphate materials – Excavated materials contained in metal skip bins for testing before removal from site. (2 Bins – 3 samples taken from each) • Enviropacific contracted to test soil material; with negative results with contaminants in the soil
Noise and Vibration	• Noise and vibration monitoring to be conducted at Sensitive receivers – AGL personnel carrying out noise and vibration monitoring	• From External Audit responsibility of testing to be carried out by Downer. A noise monitor was purchase and tests carried out but monitoring results not recorded.
Air Quality	• CEMP developed and implemented • Traffic management and soil disturbances monitored and controlled	• Minimal dust generation, vehicle movement restricted and stockpiles and road ways controlled with dust suppression. – Water down when required
Waste Management	• Weekly Environmental Inspection Check List Temporary site – DA-ZH-F116.9 • Waste Disposal register maintained – ENV-04-AP09-F01	• Waste collected and disposes of using accredited removal company – Veolia contractors and Waste Chem. • Register Maintained • Dockets collected and filed with register
Traffic	• Traffic movement plan generated for site • Restrictions of vehicle access to site • Traffic Management standard followed DA-ZH-FM028.3 - Plant Risk Assessment Form	• Designated car park up at front of AGL Building • Approval required from Site supervisor to access site • Risk assessment completed for Plant
Dangerous Goods	• Hazardous Goods Procedure Followed - E-SE-P10_Hazardous_Substances	• SDS register completed and SDS available for site personnel • Hazardous chemical container used to store chemicals safely on site

Potential Environmental Impact	Controls Implemented	Effectiveness of Controls
Flood	• CEMP developed and procedure for flooding site response	• Controls not initiated due to no flooding issues. • Heavy rain events occurred which effected some sediment controls. Silt fencing had to be assessed occasionally after heavy rain event to confirm adequate control measures were implemented.
Spill Incident Response	• CEMP Developed • Spill Kit available • Designated refuelling point nominated on site	• No Spills reported • Designated Refuelling point used

3.2 CBI ENVIRONMENTAL INITIATIVES

During the reporting period, CBI has implemented numerous environmental initiatives and innovations.

- Environmental inspection of construction equipment for leaks and weeds before entering the site;
- Recycling and waste management promoted through regular toolboxes and placement of recycling bins at work stations;
- Live capturing of fauna to confirm if introduced or native species e.g. rats and mice;
- Daily inspection of ablutions for running water to avoid tank full shut off or overflow;
- Site boundary rubbish clean up; and
- Removal of weeds from construction areas.

3.3 POWERSERVE/DOWNER EDI (ECN & JRS) ENVIRONMENTAL INITIATIVES

Downer EDI Zero Harm division have implemented an initiative to change portable light stands from candescent to LED when the opportunity arises. New purchases of lighting are also to be LED in order to gain greater energy efficiencies and maximise product life.

3.4 LUCAS ENGINEERING ENVIRONMENTAL INITIATIVES

No environmental initiatives have been implemented by Lucas Engineering during the reporting period.

3.5 TRAINING

3.5.1 CBI Training and Inductions

The CBI induction covers environment, safety and quality information. Attendance is compulsory prior to working on-site. The induction concentrates on the high risk environmental issues that are described in the CEMP and relate to the works being undertaken by the inductees.

During the reporting period, a total of 213 personnel were inducted. Since the commencement of the project, the total number of inductees is 1101.

3.5.2 *CBI Toolbox Talks*

Toolbox talks allow for regular communication of relevant environmental issues to the construction staff. The topics of these regular communications are provided in *Table 3.5*. In addition to the toolbox talks Environmental Work Method Statements are regularly communicated with construction teams prior to the commencement of a new activity. This allows construction staff to understand their responsibilities and the industry standard environmental work method for completing the specific activity.

Table 3.5 CBI Environmental Tool Box Talks

Month	Tool Box Talk Topics
March 2014	• Housekeeping
April 2014	• Hydrocarbon Spill Response
May 2014	• Recycling and waste segregation
June 2014	• Recycling and waste segregation • Reporting of all spills
July 2014	• Reporting of fuel spills and leaks • Waste segregation and recycling protocol • Dewatering using pumps • Littering and cigarette butts • Dust management
August 2014	• Reporting of fuel spills and leaks • Waste segregation and recycling protocol

In conjunction with toolbox talks, the environmental staff participated in daily prestart meetings to discuss the environmental issues relevant to the days planned work activities. Environmental issues discussed include but are not limited to dust, noise, spill response, waste management and feedback from any incidents or near misses reported.

3.5.3 *Other Training provided by CBI*

CBI completed a formal training session using PowerPoint to discuss hydrocarbon spill response and also how to correctly and effectively use the spill kits. No other environmental training has been provided by CBI during the reporting period.

3.5.4 *PowerServe/Downer EDI (ECN) Training and Inductions*

The PowerServe/Downer EDI induction covers environment, safety & quality information, including key areas such as; cultural heritage, surface water, ground water, flora & fauna. The induction is a mandatory perquisite prior to entering the work area.

During the reporting period, PowerServe/Downer EDI have inducted 156 contractors/visitors to site. Since the commencement of the project, the total number of inductees is 248.

3.5.5 PowerServe/Downer EDI (ECN) Toolbox Talks

Toolbox talks provide a forum for regular communication of relevant environmental aspects for the workers. The topics which have been communicated to date are summarised in *Table 3.6*.

In addition to tool box talks Safe Work Method Statement have been created in order to incorporate relevant environmental risks & required controls.

Table 3.6 PowerServe/Downer EDI (ECN) Environmental Tool Box Talks

Month	Tool Box Talk Topics
March 2014	• Maintain sediment erosion controls on SE spoon drain • Ensure refuelling occurs in accordance with CEMP • Trench dewatering procedure and record keeping • Housekeeping – do a clean-up at the end of each day • Top soil segregation in easement • Spill response and reporting • Snake alert – reminder to keep distance and report
April 2014	• Concrete waste disposal • Cap conduits and pipes to stop fauna nesting • Ensure sediment erosion controls are in place before break • Spill response and reporting requirements
May 2014	• Waste management • Speed limits to be observed on gas access track – watch for fauna
June 2014	• On site plant maintenance requirements • Housekeeping and general rubbish expectations • Smoking rules • Revised refuelling work instruction
July 2014	• Spill kits and locations • Housekeeping • Speed limits – requirements and expectations • Sediment erosion control maintenance • Designated smoking area • Incident reporting – requirements and timelines • Zero Harm innovation –portable light stands with LEDs
August 2014	• Speed limits – requirements and expectations • Spill kits and locations • Plant maintenance records – requirements • Food scraps and litter disposal • Refuelling procedure • Accumulated rain water – pH testing and observation records

3.5.6 Other Training provided by PowerServe/Downer EDI (ECN)

PowerServe/Downer EDI have created a further tool box induction designed to address specific areas which apply to the works within the easement. This tool box is provided additionally to any fully inducted person prior to beginning works in the easement to ensure that they have been sufficiently trained to work outside of the confines of the main site.

3.5.7 Lucas Engineering Training and Inductions

The Lucas Engineering induction covers environment, safety and quality information. Attendance is compulsory prior to working on-site. The induction concentrates on the high risk environmental issues that are described in the CEMP and relate to the works being undertaken by the inductees.

During the reporting period, Lucas Engineering has inducted 38 contractors/visitors to site. Since the commencement of this component of the project, the total number of inductees is 118.

3.5.8 Lucas Engineering Toolbox Talks

Toolbox talks allow for regular communication of relevant environmental issues to the construction staff. The topics of these regular communications are provided in *Table 3.7*.

Table 3.7 Lucas Engineering Environmental Tool Box Talks

Month	Tool Box Talk Topics
March 2014	• Subsidence • Spill management / response • Refuelling • Environmental Due Diligence
April 2014	• Mosquito information • Review bentonite leak
May 2014	• Last day of cycle, incidents more likely to occur
June 2014	• Disposal of cigarette butts
July 2014	• HDPE Swarf disposal into bins • Inspection & Maintenance of Silt Fencing and proper disposal of cigarette butts.
August 2014	• Inspection & Maintenance of Silt Fencing and proper disposal of cigarette butts. Heavy rain forecast, controls in place. • Inspection & Maintenance of Silt fencing. • Inspection & Maintenance of Silt Fencing and proper disposal of cigarette butts.

3.5.9 Other Training provided by Lucas Engineering

No other environmental training has been provided by Lucas Engineering during the reporting period.

3.5.10 Downer EDI (JRS) Training and Inductions

The Downer EDI induction for the JRS works covers environment, safety & quality information, including key areas such as; surface water, spill response and flora & fauna. The induction is a mandatory perquisite prior to entering the work area.

During the reporting period, Downer EDI has inducted 82 contractors/visitors to the JRS site.

3.5.11 Downer EDI JRS Toolbox Talks

Toolbox talks provide a forum for regular communication of relevant environmental aspects for the workers. The topics which have been communicated to date are summarised in *Table 3.8*.

In addition to tool box talks Safe Work Method Statement have been created in order to incorporate relevant environmental risks & required controls.

Table 3.8 Downer EDI (JRS) Environmental Tool Box Talks

Month	Tool Box Talk Topics
March 2014	• Not on site
April 2014	• Disposal of Ground water and Silt fencing
May 2014	• Silt Fencing, Hazardous Substances, Waste Disposal
June 2014	• Nil
July 2014	• PH Testing of Water
August 2014	• Plant Refuelling, Spill Response Procedure

3.5.12 Other Training provided by Downer EDI (JRS)

No other environmental training has been provided by Downer EDI for the JRS site during the reporting period.

4 ENVIRONMENTAL MONITORING

4.1 SUMMARY OF ENVIRONMENTAL MONITORING

4.1.1 CBI Environmental Monitoring

CBI undertook the following environmental monitoring:

- Daily and weekly inspections which includes checks on erosion and sediment controls, weeds, spot checks on machinery for leaks and levels of exhaust emissions, dust;
- Noise monitoring – ambient and spot checks on equipment; and
- Stormwater sampling and testing prior to discharge to surface and/or groundwater.

4.1.2 PowerServe/Downer EDI (ECN) Environmental Monitoring

Downer EDI undertook the following environmental monitoring:

- Daily and weekly inspections which includes checks on erosion and sediment controls, checks on machinery for leaks, check for water turned off in portable toilets and generator switched off and fuel isolated at end of day;
- Sampling of excavated soil to check for presence of potential or actual acid sulfate soil; and
- Surface water sampling for accumulated water in bunded areas prior to discharge to ground.

4.1.3 Lucas Engineering Environmental Monitoring

Lucas Engineering undertook the following environmental monitoring:

- Lucas Engineering daily inspections;
- JBS&G / Lucas environmental weekly inspections; and
- JBS&G sampling and testing of waste, water, soil as required. Waste classification undertaken during this reporting period is described in *Section 4.2.8*.

4.1.4 Downer EDI (JRS) Environmental Monitoring

Downer EDI undertook the following environmental monitoring for the JRS site:

Daily and weekly inspections which includes checks on erosion and sediment controls, checks on machinery for leaks, check for water turned off in portable toilets and generator switched off and fuel isolated at end of day; and

- Surface water sampling (pH) for accumulated water in excavations prior to discharge to ground; and
- Acid Sulphate monitoring completed on excavated soil before removal from site.

4.2 *DETAILS AND ANALYSIS OF RESULTS*

4.2.1 *Noise Monitoring*

CBI

A total of 31 attended noise monitoring events were undertaken by CBI from March 2014 to August 2014 to assess the noise impact of construction work as it progressed. Monitoring was undertaken within the site boundary at varying distances from construction activities and at the closest sensitive receiver, the southern boundary of the Hunter Region Botanic Gardens (HRBG). A summary of these results are displayed in *Table 4.1*. Detailed results are provided in *Annex B*.

Table 4.1 CBI Attended Noise Monitoring Results for Reporting Period

Date	Time	Location	Predicted L_{Aeq}dBA	Noise Goal L_{Aeq} (15 min) (dBA)	L_{Aeq} (15 min) dBA
11-Mar-2014	6:59PM	Site Compound	53	-	54.5
19-Mar-2014	8:37PM	Site Compound	53	-	60.2
1-Apr-2014	9:31PM	Site Compound	53	-	50.7
2-Apr-2014	8:49 AM	Site boundary	73	-	51.3
2-Apr-2014	9:20 AM	HRBG boundary (R1)	47	60	40.0
8-Apr-2014	10:36PM	Site Compound	53	-	63.2
15-Apr-2014	11:13PM	Site Compound	53	-	50.0
23-Apr-2014	12:09AM	Site Compound	53	-	50.8
29-Apr-2014	2:41 PM	Site boundary	73	-	56.9
29-Apr-2014	3:10 PM	HRBG boundary (R1)	47	60	53.6
29 Apr 2014	7:30PM	Site Compound	53	-	50.8
2 May 2014	2:58 PM	Site Compound	73	-	62.4
14-May-2014	12:56 AM	Site Compound	73	-	64.1
21-May-2014	6:38 PM	Site Compound	73	-	52.3
27-May-2014	7:31 PM	Site Compound	73	-	56.2
4-Jun-2014	9:53 AM	Site boundary	79	-	52.9
4-Jun-2014	10:22 AM	HRBG boundary (R1)	53	60	46.2
18-Jun-2014	12:52 AM	Site Compound	73	-	50.8
1-Jul-2014	10:05 PM	Site Compound	61	-	53.3
1-Jul-2014	11:15 AM	Site boundary	61	-	51.1
1-Jul-2014	11:44 AM	HRBG boundary (R1)	53	60	45.3
10-Jul-2014	12:52 AM	Site Compound	61	-	50.2
22-Jul-2014	5:41 PM	Site Compound	53	-	50.3

Date	Time	Location	Predicted L_{Aeq}dBA	Noise Goal L_{Aeq} (15 min) (dBA)	L_{Aeq} (15 min) dBA
30-Jul-2014	5:18 PM	Site Compound	73	-	64.2
30-Jul-2014	11:05 AM	Site boundary	79	-	57.4
30-Jul-2014	11:37 AM	HRBG boundary (R1)	53	60	48.0
5-Aug-2014	9:26 PM	Site Compound	73	-	51.2
13-Aug-2014	6:41 PM	Site Compound	73	-	49.9
25-Aug-2014	5:44 PM	Site Compound	53	-	53.3
25-Aug-2014	10:06 AM	Site boundary	79	-	54.1
25-Aug-2014	10:39 AM	HRBG boundary (R1)	53	60	44.3

The monitoring results shows that noise levels at all sites were below the predicted construction noise levels and construction noise goal at R1. Dominant noises noted at this location included bird calls and Pacific Highway traffic with occasional helicopters and fighter jet intrusions.

4.2.2 Blasting

No blasting was undertaken during the reporting period.

4.2.3 Air Quality

No air quality monitoring was undertaken during the reporting period with the exception of visual checks for levels of dust during daily and weekly inspections by the contractors.

4.2.4 Surface Water Monitoring

CBI

A total of nine surface water monitoring events were completed by CBI from March 2014 to August 2014 to assess water quality prior to discharge to surface water or ground for infiltration to groundwater. Monitoring was undertaken at the Process Area Holding Pond, LNG Tank Holding Pond and the Wetlands Holding Pond. There were no exceedances of the adopted thresholds for the analytes monitored. Full results are provided in *Annex B*.

PowerServe/Downer EDI (ECN)

A total of nine sampling events were completed by PowerServe/Downer EDI for the ECN site to confirm rainwater contained within the substation bund was suitable for discharge to ground for infiltration.

A summary of these results are displayed in *Table 4.3*.

Table 4.2 ***PowerServe/Downer EDI Surface Water Monitoring Results for Reporting Period***

Date	Time	Location	Volume kL	pH	Visible Oil Sheen
13/06/14	8:00am	Transformer Bund	60	7.6	N
13/06/14	10:35am	Transformer Bund	60	7.1	N
05/06/14	7:30am	Transformer Bund	30	7.69	N
28/07/14	7:30am	Transformer Bund	8	7.01	N
18/08/14	1:00pm	Transformer Bund	6	7.4	N
19/08/14	10:00am	Transformer Bund	6	7.65	N
27/08/14	7:30am	Transformer Bund	45	8.0	N
28/08/14	7:30am	Transformer Bund	120	7.2	N
28/08/14	9:30am	Transformer Bund	60	7.3	N

There were no exceedances of the adopted thresholds for the analytes monitored. Full results are provided in *Annex B.*

Lucas Engineering

Lucas Engineering engaged JBS&G (NSW & WA) Pty Ltd (JBS&G) to provide sampling and analysis of surface water within a pit located adjacent to Old Punt Road, Hexham prior to disposal to the stormwater system. Water was sampled on 9 May 2014 and analysed for pH, electrical conductivity and total suspended solids.

The results of analysis indicated the water was within the adopted thresholds and was subsequently discharged to stormwater.

Downer EDI (JRS)

During the period 2 June 2014 and 25 August 2014 pH tests were completed daily when present on site. Results indicate pH range was between 7.0 to 7.6.

4.2.5 Groundwater and Surface Water Monitoring

Groundwater and surface water monitoring is undertaken quarterly at the NGSF, including the access road and the utility and pipeline corridor by Coffey Geotechnics. Groundwater samples are also collected from the 'Hunter River Area', an area comprising the construction of the gas pipeline, and the crossing of the Hunter River.

There are seven groundwater monitoring bores at the Hunter River Area, and eleven groundwater monitoring bores and five surface water monitoring sites at the NGSF. The locations of the sampling sites are shown in Figures in *Annex B*.

At times, sampling of surface water was not possible as the sampling sites were dry.

The results of the laboratory analysis are provided in *Annex B* and summarised in *Table 4.4*.

Table 4.3 Summary of Groundwater and Surface Water Monitoring Results

Date	Number of Locations	Outcome	Action Taken[1]
Groundwater			
March 2014	Gas Storage Facility – 11 wells	Measured concentrations of analytes did not exceed the adopted threshold criteria other than: • dissolved iron in MW14	Increase in iron levels suggested by Coffey's to be potentially related to microbial redox processes occurring within the bore.
March 2014	Hunter River Area – 7 wells	Measured concentrations of analytes where within the adopted threshold criteria	
June 2014	Gas Storage Facility – 11 wells	Measured concentrations of analytes where within the adopted threshold criteria with the exception of: • total phosphorus in MW18 • dissolved iron in MW6	Potential sources for the elevated phosphorous result at MW18 are not clear and may be fertilisers, animal wastes or vegetation removal. No use of fertiliser or other nutrients was recorded during site activities. Phosphorous levels will continue to be monitored closely in subsequent sampling events. Increase in iron levels potentially related to microbial redox processes occurring within the bore.
June 2014	Hunter River Area – 7 wells	Measured concentrations of analytes where within the adopted threshold criteria	
Surface Water			
March 2014	Five	SW2 and SW3 were dry. Water was not flowing At SW4. Measured concentrations of analytes where within the adopted threshold criteria.	-
June 2014	Five	Water was not flowing at SW3 and SW4. Measured concentrations of analytes where within the adopted threshold criteria with the exception of: • Nitrate for SW1 • Total zinc at SW4 • TPH C15-C28 and TPH C29-C36 at SW3 and SW4 respectively	Potential sources for the elevated nitrate result at SW1 may be animal wastes and other organic sources of nutrients. Since no fertilisers are used on the site and SW1 is located away from site clearance and construction activities, it is likely that the result is not related to activities on site. A number of potential sources of zinc are present in the area of SW4 including stormwater runoff from roads and industrial activities in the vicinity of the culvert. SW3 and SW4 are located in a culvert accessible to the public and located near a road. Dumping of waste has also occurred in this area. All analytes over the thresholds will continue to be monitored closely in subsequent sampling events.

1. Action taken statements are from the Coffeys Geotechnics Groundwater and Surface Water Monitoring Reports.

4.2.6 *Hydrostatic Water Quality Testing*

The LNG tank and firewater tank will be hydrostatically tested to confirm the tanks do not leak using potable water from Hunter Water Corporation (HWC) supply. One water sample ('HWC meter') was collected from the potable water supply point shown in *Annex B*.

The results of the laboratory analysis are provided in *Annex B* and summarised in *Table 4.5*.

Table 4.4 Summary of Hydrostatic Test Water Monitoring Results

Date	Number of Locations	Outcome	Action Taken[1]
Potable Water			
March 2014	1	• Measured concentrations of analytes in the surface water did not exceed the adopted threshold criteria.	Nil required

4.2.7 *Erosion and Sediment Control*

The high level of soil disturbance and exposure of soil surfaces during the clearing and early construction phase of works has meant that erosion and sediment controls have been a key area of focus. Erosion and Sediment Control Plans (ESCPs) have been implemented and reviewed/adjusted to ensure they are adequate given the current, dynamic nature of the site.

Erosion and sediment controls are inspected weekly and following rainfall events by site environment officers, engineers and foremen.

4.2.8 *Waste*

Lucas Engineering

Lucas Engineering engaged JBS&G (NSW & WA) Pty Ltd (JBS&G) to provide a waste classification for off-site disposal of stockpiled material located within the site compound in the southern portion of the Hexham site. The stockpile was approximately 500m^3 in volume and described as fill material consisting of sand, brown, dry, heterogeneous, soft, low plasticity, with inclusions of roots. Eleven characterisation samples were taken on 4 April 2014 and analysed for total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs), heavy metals (arsenic, cadmium, chromium, lead, mercury and nickel) and asbestos.

The results of analysis indicated the material be classified as General Solid Waste (Non-Putrescible).

4.2.9 Heritage

Aboriginal Heritage

Daily inspections for cultural heritage items are undertaken by site staff. No artefacts were discovered during the reporting period.

Non-Aboriginal Heritage

No areas of non-Aboriginal heritage are within the project area.

4.2.10 Flora and Fauna

Minor clearing was completed at the Main Access Road near the entrance of the NGSF by Lucas Engineering during the reporting period. Pre-clearance inspection reports indicate no protected or endangered flora in the areas to be cleared. A fauna spotter was not employed during clearing works as required which has been reported as a non-conformance (refer *Section 8*).

No other clearing activities were undertaken during the reporting period. No further nest boxes have been installed in the reporting period.

Daily inspections for fauna and weekly inspections for flora, including weeds are undertaken by site staff.

AGL commissioned Kleinfelder to conduct annual monitoring of nest boxes to evaluate whether they are being used by native fauna, and to ensure they remain operational and available for use. The first round of monitoring was completed over the period 17 to 18 July 2014. 87 of the 100 installed boxes were available to mammals for use. 47% of all available boxes contained evidence that they had been used by fauna since installation. More than half of the available Glider, Pygmy Possum and Possum boxes had evidence of use (73%, 70% and 54% respectively), however no bat boxes appeared to have been used. The 13 boxes unavailable have since been replaced or repaired.

5 ENVIRONMENTAL AUDITS AND INSPECTIONS

5.1 AUDITS

Seven external audits and two internal audits were completed during the reporting period. The details of the audits are outlined in *Table 5.1*

Table 5.1 Audits during the Reporting Period

Type	Date	Undertaken by	Description	NCs /IOs
External	13/03/14	Project ER	Lucas Engineering Audit – The audit included a review of the implementation of the following plans: • Soil Management Plan; • Surface Water Management Plan; • Acid Sulfate Soil Management Plan; • Cultural Heritage Management Plan; • Dangerous Goods Management Plan; • Groundwater Management Sub Plan; and • Noise and Vibration Management Sub Plan.	11/3
External	14/03/14	Project ER	PowerServe Audit - The audit focused on the implementation of the following plans: • Soil Management Sub Plan; • Surface Water Management Sub Plan; and • Cultural Heritage Management Plan • Miscellaneous Environmental Impacts Plan (including Dangerous Goods and Waste; and • Groundwater Management Sub Plan.	1/5
External	10/04/14	Project ER	CBI Audit -The audit included a review of the implementation of the following plans: • Soil Management Sub Plan; • Surface Water Management Sub Plan; • Air Quality Management Sub Plan; • Groundwater Management Sub Plan; • Waste Management Sub Plan; • Noise and Vibration Management Sub Plan; and • Dangerous Goods and Hazardous Materials Management Sub Plan.	4/1
External	05/06/14	Project ER	CBI Audit – The audit focused on the implementation of the following plans: • Soil Management Plan; • Surface Water Management Plan; • Air Quality Management Sub Plan; • Groundwater Management Sub Plan; • Waste Management Sub Plan; • Noise and Vibration Management Sub Plan and • Dangerous Goods and Hazardous Materials Management Sub Plan.	5/2

Type	Date	Undertaken by	Description	NCs /IOs
External	11/06/14	Project ER	Lucas Engineering Audit. The audit included a review of the implementation of the following plans: • Soil Management Plan; • Surface Water Management Plan; • Acid Sulfate Soil Management Plan; • Cultural Heritage Management Plan; • Dangerous Goods Management Plan; • Groundwater Management Sub Plan; and • Noise and Vibration Management Sub Plan.	7/9
External	12/06/14	Project ER	Downer EDI (JRS) Audit - The audit focused on the implementation of the following plans: • Cultural Heritage Management Plan; • Groundwater Management Sub Plan; • Surface Water Management Sub Plan; • Noise and Vibration Management Sub Plan; • Acid Sulfate Soil Management Sib Plan; and • Miscellaneous Environmental Impacts Plan.	1/11
External	12/06/14	Project ER	PowerServe Audit - The audit focused on the implementation of the following plans: • Soil Management Sub Plan; • Surface Water Management Sub Plan; and • Cultural Heritage Management Plan • Miscellaneous Environmental Impacts Plan (including Dangerous Goods and Waste; • Acid Sulfate Soil Management Sub Plan; and • Groundwater Management Sub Plan.	0/1
Internal	21/05/14	CBI Environment Manager	Audit of all areas.	0/3
Internal	28/05/14	SAI Global	CBI ISO14001 certification audit	0/6
NC = Non-conformance; IO = improvement opportunities				

5.2 *ENVIRONMENTAL INSPECTIONS*

Regular inspections undertaken by the ER generate actions that are communicated to subcontractor environmental personnel for completion. These inspections are usually completed with subcontractor staff. A report is issued at the end of each inspection with a list of actions to be addressed. A total of 35 inspections were completed by the ER during the reporting period.

In addition to inspections undertaken by the ER, daily and weekly site inspections are undertaken by CBI, Downer EDI and PowerServe environmental personnel. Lucas Engineering undertake daily inspections whilst JBS&G undertake weekly inspections on behalf of Lucas Engineering.

Actions arising from the CBI site inspections are entered in an Action Register, which are tracked until completion.

6 *ENVIRONMENTAL COMPLAINTS*

No complaints relating to the project were made to the EPA Pollution Hotline during the reporting period.

7 *COMPLIANCE STATUS*

Monitoring of compliance is required in accordance with CoA B54a. The tracking of compliance occurs throughout the reporting period through internal and external audits as described in the CEMP.

CBI have recorded zero non – compliances against the project EPL during the applicable reporting period.

Compliance tracking tables are maintained to monitor compliance with the following:

- Ministers Conditions of Approval MP10_0133 issued 10 May 2012;
- Statement of Commitments from the Preferred Project Report CR 6023_1-_v3 issued September 2011; and
- EPBC 2010/5752 issued 18 July 2012.

These tables are attached as *Annex A* to this Compliance Report.

Findings resulting from external audits are divided into five categories as follows:

- **Conformance (C)**: Adequate and appropriate implementation against audit requirements.
- **Non-conformance Category 1 (NC-1)**: Failure to meet the requirements of the audit criteria in terms of legislative requirements, failure to achieve the management performance outcomes identified in documentation, or ineffective environmental management of the activity that represent an ***immediate risk*** to the environment or reputation of the company.
- **Non-conformance Category 2 (NC-2)**: Failure to achieve the management performance outcomes identified in documentation, or ineffective environmental management of the development that does not represent an immediate risk to the environment. These will generally be associated with documentation, records or administrative requirements.
- **Improvement Opportunity (IO)**: A finding which does not strictly relate to the scope of the audit and which could lead to performance improvement.
- **Not Applicable (NA):** requirement was not applicable to project operations during the audit as requirement or control was not applicable to the activities underway at the time.

In addition to the above, the status of the item or approval condition is divided into the following categories:

- **Open –** item has yet to be completed with actions continuing.
- **Closed –** item has been completed and the audit criteria satisfied with no further actions outstanding.
- **Outstanding –** action is to be completed.

8 SUMMARY OF NON-COMPLIANCES

8.1 NON CONFORMANCES AND CORRECTIVE ACTIONS

Table 8.1 provides a summary of the non-conformances and the response undertaken by the contractors to close-out the actions.

Table 8.1 Summary of Non-Compliances Received During the Reporting Period

Audit Details	NC Description	Response
ER (April) -CBI	Second storage container for effluent added to toilets. Container is located in laydown area where forklift is in operations. As the groundwater in this location is less than 0.5mbgl any sewage spills are likely to impact groundwater before clean up could occur.	Placement of a physical barrier to the area around the effluent tank with spacing to provide buffer to any accidental collisions by machinery in the area.
ER (April) -CBI	Concrete washouts occur as per approval modification. Site inspections during the audit period note the liner has been torn and requires replacement (two occurrences).	Liner replaced
ER (April) -CBI	Night time monitoring completed near site office with noise goals exceeded and audibility of site works evident at this location. Unclear of noise goals are met at sensitive receptor (HRBG).	Monitoring of daytime noise levels at the site compound and at off-site locations was completed to determine noise relationship at locations to confirm night time noise levels are not exceeded at the site boundary and works are inaudible at sensitive receptors.
ER (April) -CBI	Storage of Class 2 (gases) stored next to Class 3 (flammable substances). Segregation of Class 2 and 3 should be at least 5 metres.	Class 2 gases moved away from shipping container storing flammable goods.
ER (March) - Lucas	Frac-out from HDD exit point Old Punt Road north of Kennington Drive on night of 12/3/14. Drilling mud spilled to land however contained. This material was subsequently washed into stormwater.	Use of street sweeper to clean up soil material on Old Punt Road pavement recommended. All incidents to be reported to EPA and DP&I as per CoA A15
ER (March) - Lucas	Sediment controls not installed along western boundary of HDD2, which drains to a wetland	Installation of additional controls in this area
ER (March) - Lucas	Fuel storage area at HDD2, upslope of the wetland was not bunded as noted during the site inspection.	Bunding all fuel containers and/or storage areas required.
ER (March) - Lucas	Noise monitoring not completed at receptors during audit period. Checks on equipment also not completed.	Monitoring of noise emissions from equipment to demonstrate it meets noise certification and criteria required.

Audit Details	NC Description	Response
ER (March) - Lucas	Commitment to complete testing for water quality parameters including pH prior to re-injection. This was not completed at time of audit.	Monitoring of pH, as a minimum, to be completed prior to dewatering
ER (March - PowerServe	Concrete wash out has been constructed in the AusGrid easement. Consider wash out in the approved designated area in the Primary Project Area (PPA) or wash out off site.	PowerServe contacted concrete supplier and confirmed that wash outs will be completed off site.
ER (June) - CBI	Storage of Class 8 shipping container located near workshop area also contained carton of Class 2 (gases). Segregation of Class 2 and 8 needs to be at least 3m in a well-ventilated area.	Goods separated. Segregation charts posted in DG areas.
ER (June) - CBI	A diesel spill was noted at the generator located near the gas storage tank. Indications are that it was likely a number of spills had occurred in the area over a period of time due to design of tank.	Created JSA for fuelling generator which includes fill volume limits and mandatory inspections during and after refuelling to check for leaks/spills.
ER (June) - CBI	Concrete washout liner has been torn which was replaced but has since been torn again.	Liner replaced.
ER (June) - CBI	Scouring of batter on road leading to laydown area along northern boundary. Some sediment is beginning to flow over silt fence.	Batter chute installed in area and silt fence reinstated.
ER (June) – Downer EDI	Refuelling of excavator and small plant from small fuel storage on unit. No training in refuelling procedure.	Development of refuelling procedure and training to be completed.
ER (June) - Lucas	Incident (586/AGL 009) on 14/03/14 at HDD2 North Old Punt Road exit point. Mud and soil tracked onto Old Punt Road, initially swept off then washed off. Frac out event at HDD2 North Old Punt Road exit point 9/04/14 (612/AGL 12B). Incident on 6/04/14 (612/AGL 11) of soil spill on public road. These incidents have not been reported to DP&I As per CoA A15	Any incidents reported to agencies need to be reported to DP&I as per CoA A15. Notifications to agencies to be kept on record.
ER (June) - Lucas	Water in trenches pumped into other sections of trench as required or pumped into a temporary silt fence structure before dispersal over easement to allow for reinfiltrate into groundwater. No evidence available that testing undertaken routinely during dewatering.	Development of protocol for field testing of pH and recording of dewatered groundwater to be completed.
ER (June) - Lucas	Noise monitoring not completed at receptors during audit period. Checks on equipment also not completed.	Monitoring of noise emissions from equipment to demonstrate it meets noise certification and criteria required.

Audit Details	NC Description	Response
ER (June) – Downer (JRS)	Provide workforce inductions and training to ensure personnel have knowledge of the correct use of refuelling systems and chemical handling procedures	Refuelling of excavator and small plant from small fuel storage on unit. Spill kit in ute and on site. No training in refuelling procedure. Consider development of refuelling procedure and training. Refuelling plan to be developed onsite and Prestart and tool box with work crew
ER (August) – AGL	Downer EDI CEMP and supporting plans for the Jemena Receiving Station works have not been uploaded on website	Plans to be uploaded onto website with DP& I acceptance letter
ER (August) – AGL	The last four incidents reported to agencies such as PSC and EPA have not been reported to the DP&I except through the six monthly compliance report (this repor)	AGL to notify DP&I immediately of any incidents reported to any other agencies.
ER (August) – AGL	Pre-clearance inspection reports indicated no endangered flora to be cleared for works however a fauna spotter was not used as per condition by Lucas Engineering during clearing of sections of Main Access Road and end of Gas Access Track.	As no further clearing works are to be completed as part of the Project, there are no further actions.
ER (August) – AGL	Speed limits along the access road and utility corridor will be in accordance with PSC's Koala Plan of Management to minimise injury or death to koalas and other wildlife – this speed is 40km/h however the speed signs installed are for 50km/h	Speed limit signs to be reviewed.
CBI Internal Audit – All areas	There is a need for more Spill Kits distributed around the site	Seven additional wheelie bin type spill kits were added to make a total of 14 fixed location spill kits.
CBI Internal Audit – All areas	Inadequate bunding for grouting mixing station	Adequate bunding provided to workers for grout mixing activities.
CBI Internal Audit – All areas	Lack of bins to segregate and recycle waste around the site	Thirteen waste stations including recycle bins established across work fronts.

8.2 ENVIRONMENTAL INCIDENTS

8.2.1 CBI Environmental Incidents

During the reporting period, 20 minor environmental incidents occurred which primarily included low volume spills (refer *Table 8.2* for summary). Spills and leaks continue to be raised extensively in daily prestart meetings and weekly tool box talks. Daily equipment and vehicle checks are also completed. None of the incidents were reported to external agencies.

Table 8.2 Summary of CBI Environmental Incidents

Date	Description	Outcome	Reported to external Agencies
03-Mar-14	< 1 L of diesel was spilt during refuelling 150T Crawler crane. Nozzle not correctly monitored by CBI employee.	Area cleaned up using spill pads and contaminated soil placed in contaminated waste bags and disposed of in contaminated waste drums. Pre-start incident spoke to CBI employee about expectations regarding monitoring the refuelling process .	NA
03-Mar-14	Subcontractor washed out concrete residue from truck outside of designated washout bay provided.	Washout residue cleaned up immediately. Truck operator reprimanded for not following procedure.	NA
02-Apr-14	Approximately 100ml hydraulic oil leaked from EWP onto concrete slab in heater area.	Spillage cleaned up. EWP repairs complete.	NA
07-Apr-14	Approximately 500ml of hydraulic fluid leaked onto ground from forklift after hose repairs completed.	Hydraulic hose repaired two days earlier but residual fluid trapped in sound proofing later leaked on the ground while the forklift was parked. Impacted soil cleaned up and placed into hydrocarbon soil drums for disposal.	NA
10-Apr-14	Approximately 200ml of hydraulic oil leaked from hose when it ruptured on elevated work platform.	Hydraulic oil spray cleaned up from ground and mopped up from frame of EWP. Approximately 25 kilos of contaminated soil including spill pads disposed with oil waste at subcontractor yard.	NA
30-Apr-14	Scaffolders noticed oil sheen on soil spreading to standing water during rain. Type of oil unknown.	HSE personnel used spill pads to soak up sheen from standing water. Oil sheen removed and soil cleaned up. Noted in following days prestart to bring attention to reporting and cleaning up spills immediately.	NA
29-May-14	Oil sheen on surface water near LNG Tank.	Sheen removed from surface water and soaked up from soil. Soil removed. Crew reminded to control, contain, clean up and report all spills. Initial investigation shows fuel system on generator not fit for purpose causing workers to alter the fuel system during refuelling. Investigation ongoing.	NA
13-Jun-14	CBI escort to contract fuel truck found putting sand over spilled diesel to soak it up rather than using spill kit materials. Generator fuelling system not fit for purpose so modifications made by fuelling crew to fill without assessing risk. Splash back prone due to air lock. Vent not adequate so has to be removed to reduce splash back.	Worker disciplined and refocussed to report all spill and clean up spillage using spill kit materials Spill kit placed next to generator. Spill pads placed around vent cap. Discussed modifications with generator supplier but modifications not likely due to generator/ tank configuration. Filling of this generator to be monitored closely.	NA

Date	Description	Outcome	Reported to external Agencies
17-Jun-14	Fuel pod suspended from crane inside tank to fill generator on vertical welding machine. Fuel splash back spills onto tank walls and work areas. Fuel soaked rags left on working deck where welding takes place. Estimate 200ml splash back.	Consider modifying fill port to prevent splashback. Consider placing spill clean-up materials in hydrocarbon bin.	NA
25-Jun-14	Jerry can of water tipped over and spilled onto dye penetrant soaked rags in storage container. Water leached red dye from the rags overnight and partially soaked into timber floor. Estimate 50ml of hydrocarbon leached.	Cleaned up residual spillage. Store used testing rags in approved receptacle outside of container.	NA
01-Jul-14	Worker noticed fuel leaking from hose reel during refuelling activity. Approximately 100ml diesel leaked but did not reach the ground.	Perished o-ring seal on hose real on fuel truck allowed fuel to escape. Fuel line depressurised immediately. Spill pads placed under the leak. Truck left site immediately for repairs.	NA
07-Jul-14	Crew member reported hydraulic oil leaking from knuckle of small EWP onto concrete. Approximately 50ml leaked.	Plant stood down and removed from site for repairs.	NA
10-Jul-14	Crew member reported hydraulic oil leaking onto ground from Force Access EWP No. B135018. Approximately 100ml leaked.	Plant stood down for repairs. Spill mopped up from EWP frame and cleaned up from ground. Hydraulic hose replaced.	NA
10-Jul-14	Subcontractor reported puddle of oil at temporary truck parking area in parking lot. Approximately 100ml of oil on the pavement.	Spillage soaked up and removed.	NA
18-Jul-14	Force Access EWP No B135018 developed small hydraulic leak. Approximately 100ml dripped onto ground.	Mechanic attended site and blanked off hose. Spillage mopped up from EWP and ground. Monitoring EWP for leaks.	NA
22-Jul-14	Approximately 100ml of diesel fuel leaked from the fuel tank cap of a portable pressure pump during operation due to overfilling and faulty seal.	Spillage cleaned up. Spill tray placed under pump. Spill kit placed next to work area. Workers reminded no to top up when refuelling. New seal placed on fuel tank filler cap.	NA
29-Jul-14	Fuel truck nozzle holster open ended so drips fall onto spill pad on tray below.	Although a spill pad was used to capture drips from the nozzle, the holster configuration should be modified to prevent drips escaping. Requested driver to have drip proof holster fitted to truck.	NA
19-Aug-14	Rainbow sheen on water in lower car park may have been caused by leaking plant. Diesel or oil from EWP or other plant previously park in the area visible on pavement.	Cleaned up drops of diesel from EWP fuel tank. Mopped up oil from pavement.	NA

Date	Description	Outcome	Reported to external Agencies
21-Aug-14	Oil sheen on gravel and water in lower car park may have been caused when drops of fuel spilled when plant was loaded onto flatbed truck during removal.	Spillage reported by crew member. Spill soaked up using spill kit materials. Clean up waste disposed of in hydrocarbon waste bin.	NA
28-Aug-14	Rainbow sheen on water and soil noticed during site inspection.	Notified CBI General Superintendent. Spill cleaned up. Spill materials placed in hydrocarbon waste bin	NA

8.2.2 PowerServe/Downer EDI (ECN) Environmental Incidents

PowerServe did not report any environmental incidents for the ECN site during the reporting period.

8.2.3 Lucas Engineering Environmental Incidents

During the reporting period, three minor environmental incidents occurred (refer *Table 8.3* for summary) with two of these reported to external agencies.

Table 8.3 Summary of Lucas Engineering Environmental Incidents

Date	Description	Outcome	Reported to external Agencies
24/03/2014	Area of ground subsided in Old HDD drill area. This area is a car park for Hexham AGL offices.	Area barricaded and restored	N/A
14/03/2014	Washing of dirt and sediment into storm water drain from road side	Tool box conducted on environmental spills actions	EPA, Port Stephens Council
09/04/2014	Bentonite escape next to Old Punt Rd.	Area cleaned up and regularly monitored	EPA, Port Stephens Council

8.2.4 Downer EDI (JRS) Environmental Incidents

Downer EDI did not report any environmental incidents for the JRS site during the reporting period.

REFERENCES

Coffey Geotechnics (2014) **Groundwater Monitoring Report March 2014 Hunter River Area Newcastle Gas Storage Facility Project – Construction Phase.**

Coffey Geotechnics (2014) **Groundwater and Surface Water Monitoring Report March 2014 Gas Storage Facility Project – Construction Phase**.

Coffey Geotechnics (2014) **Groundwater Monitoring Report June 2014 Hunter River Area Newcastle Gas Storage Facility Project –Construction Phase.**

Coffey Geotechnics (2014) **Groundwater and Surface Water Monitoring Report June 2014 Gas Storage Facility Project – Construction Phase**.

Annex A

Compliance Tracking Tables

Table A1.1 Compliance with Ministers Conditions of Approval MP10_0133 (dated 10 May 2012)

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
TERMS OF APPROVAL					
PART A – ADMINISTRATIVE CONDITIONS					
A1	The Proponent shall carry out the project generally in accordance with the: (a) Environmental Assessment; (b) Preferred Project Report; (c) Statement of Commitments; and(d) conditions of this approval. Note: the general layout of the project is shown in Appendix 1	All	All	Open	Noted – quarterly audits completed against implementation of management plans developed to reflect conditions and commitments.
A2	If there is any inconsistency between the documents in condition A1, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency with the documents listed under condition A1.	All	All	Open	Noted
A3	The Proponent shall comply with any reasonable requirement(s) of the Director-General arising from the Department's assessment of:(a) any reports, strategies, plans, programmes, reviews, audits or correspondence that are submitted in accordance with this approval; and(b) the implementation of any actions or measures contained in these documents	All	All	Open	Noted

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
LIMITS OF APPROVAL					
A4	This project approval shall lapse five years after the date on which it is granted, unless any works the subject of this approval have physically commenced before that time.	All	AGL	Compliance Closed	Project approval date 10 May 2012 Notification letter issued to Anna Timbrell on 28 Aug 12 to advise that clearing has commenced on 27 Aug 12.
A5	The gas pipeline component for the project shall follow corridor option 2 as shown in Figure 1.2 – Conceptual Project Layout in the EA. To avoid any doubt, other corridor options shown in that figure are not approved.	Design	AGL	Compliance Closed	Option 2 has been adopted
STAGING					
A6	Construction of the project may be undertaken in discrete work packages or stages. Where that occurs, these conditions of approval need only be complied with to the extent that they are relevant to that discrete work package or stage. Prior to the commencement of relevant construction or operation activities, the Proponent shall submit a Staging Report to the Director-General which: (a) describes the stages; and (b) identifies the relevant conditions of approval for each stage and how these will be addressed across and between the stages of the project.	Pre-construction Construction	AGL	Compliance Closed	Staging Plan (Document No: NGSF-WPOE-NAS-PM-PLN-0001). Correspondence to DG submitting report a) 10 stages described (Section 3) b) Appendix 1 includes spread sheet which identifies which approvals apply to each stage
A7	With the approval of the Director-General, the Proponent may submit any strategy, plan or programme required by this approval on a progressive basis for discrete work packages or stages.	Pre-construction Construction	AGL & CBI	Compliance Closed	Noted – update on submissions to be obtained from AGL as they occur. Plans to be submitted as required for each stage.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
STATUTORY REQUIREMENTS					
A8	The Proponent shall ensure that all necessary licences, permits and approvals are obtained and maintained as required throughout the life of the project. No condition of this approval removes the obligation of the Proponent to obtain, renew or comply with such licences, permits or approvals. The Proponent shall ensure that a copy of this approval and all relevant environmental approvals are available on the site at all times during the project.	All	AGL & CBI	Compliance Open	EPBC Approval obtained (2010-5752) 18 July 2012 EPL20130 issued to CBI for chemical storage and petroleum and fuel production 10 July 2012 Construction Certificate received Friday 29th September 2012. Copies of EPL and MCoA in site office (Wards and CBI).
COMPLIANCE					
A9	The Proponent shall ensure that employees, contractors and sub-contractors, and visitors are aware of, and comply with, the conditions of this approval relevant to their respective activities.	All	CBI Lucas Engineering PowerServe	Compliance Open	General induction for CBI attended 15 August 2012 includes some aspects of approval – refer CEMP and Sub-Plan Induction and Training commitments for further details. CBI, PowerServe, Downer EDI and Lucas Engineering completed inductions for all staff on Project. Review of Daily prestarts and toolbox register confirms primary environmental aspects for project are discussed including waste management, spills, erosion and sediment control, awareness of site fauna. All contractors developed Safe Work Method Statements (SWMS), which include commitments and relevant approval conditions for work tasks, which are issued to sub-contractors.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
PUBLICLY AVAILABLE INFORMATION					
A10	Subject to confidentiality, the Proponent shall make all documents required under this approval available for public inspection on request	Pre-construction Construction	AGL/CBI/ PowerServe/ Lucas Engineering Downer EDI	NC-2 Open	Plans approved by DP&I – CBI, PowerServe. Downer EDI and Lucas Engineering CEMP and sub plans uploaded onto website. NC-2 Downer EDI plans not uploaded on website (website accessed 13/10/2014)
STRUCTURAL ADEQUACY					
A11	The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA. For the purpose of section 75S(2)(b) of the Act, the relevant provisions, as defined in section 75S(1A) of the Act apply to this approval.	Pre-construction Construction	CBI	Compliance Open	Schedule 3, Basis of Design, Appendix C Section 75S(2)(b) requires private certifier to sign off on buildings/structures. AGL has engaged the services of Barker Ryan Stewart a Newcastle-based multidisciplinary town planning, engineering and private certification consultancy to assist AGL in satisfying the certification requirements for the project. Barker Ryan Stewart has in turn engaged the local firm NewCert as the Principal Certifying Authority. Stage 1 Site Preparation by NewCert (12-059) received 23-Aug-12. Stages 2 & 3 (12-106) received 6-Nov-12. Stage 4A (13-032) received 27-Mar-13. Stage 4B (13-053) received 29-May-13. Stage 4C (13-096) received 8-Oct-13. Stage 4D (13-122) received 4-Dec-13. Stages 5 & 6 (13-106) received 1-Nov-13.B16

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
SUBDIVISION					
A12	In undertaking the subdivision approved under this approval, the Proponent must comply with the requirements of the Environmental Planning and Assessment Act 1979 relating to the issue of a Subdivision Certificate (the relevant provisions referred to under section 75S(2)(b) of the Act, which continues to apply to the project).	Pre-construction	AGL	Compliance Closed	Survey Plan – Subdivision of Lot 105 DP 1125747 and easement over Lot 4 DP 1043561 – survey dated 27 March 2012
A13	The Proponent shall consult with and address all reasonable requirements of Port Stephens Council in preparing its application for a Subdivision Certificate for the project.	Pre-construction	AGL	Compliance Closed	Email to PSC 29 Dec 2012 with subdivision plan and Section 88B instrument attached. PSC reply from Amanda Gale 6 January 2012 stating 88B instrument and Linen Plan provide an easement, which legally satisfies Council's concern.
OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT					
A14	The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation or rehabilitation of the project.	All	AGL – operation and rehabilitation stage All subcontractors– construction stage	Noted Open	Noted – all management plans with implementation to be monitored during activities. Quarterly ER audits include assessment of implementation of plans.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
INCIDENT REPORTING					
A15	The Proponent shall notify the Director-General and any other relevant agencies of any incident associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within seven days of becoming aware of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.	All	Construction subcontractors to notify immediately as per POEO Act requirements AGL to liaise with agencies after initial notification and to report incidents to DP&I	NC-2 Open	1 incident reported to EPA and PSC 06/03/2013 (discharge of turbid water from excavation) by CBI 1 incident reported to EPA for effluent overflow on 15/10/2013 by CBI Reporting requirements met for both incidents to EPA. Neither incident was considered to trigger immediate reporting to DP&I. Included in 6 monthly compliance report. 1 incident reported to EPA on 3/12/2013 for small frac out of drilling mud to middle of Rd at Hexham Receiving Station by Lucas Engineering. Incident 14/03/2014 for washing of dirt and sediment into stormwater drain reported to EPA and PSC by Lucas Engineering Incident 09/04/2014 for bentonite spill next to Old Punt Rd reported to EPA and PSC by Lucas Engineering. NC-2:-AGL to always notify DP&I immediately if any other agencies notified.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
A16	The Proponent shall meet the requirements of the Director-General to address the cause or impact of any incident, as it relates to this approval, reported in accordance with condition A15 of this approval, within such period as the Director-General may require.	All	CBI, PowerServe, Lucas Engineering – implementation AGL – active governance over corrective actions taken by CBI	Compliance Open	Corrective actions proposed for incidents which occurred during reporting period have been completed. CBI - All incident and corrective actions tracked through an Action Register (170596-EN-R04). Addition of priority levels and dates for completion to this register has assisted with focussing attention on higher risk issues and actions. Downer EDI and Lucas Engineering maintain an incident register which is used to track incidents.
PART B – PRIO R TO AND DURING CONSTRUCTION					
BIODIVERSITY					
B1	The Proponent shall employ a suitably-qualified ecologist to attend site clearing and vegetation removal works, and any activities with the potential to directly or indirectly impact on the biodiversity of the project site or surrounding land during construction. The ecologist shall be employed for the purpose of identifying and advising on potential ecological impacts, including appropriate mitigation and management, as required under these conditions of approval.	Pre-construction Construction	AGL All construction subcontractors	NC-1 Closed	Shawn Capararo from ecoBiological appointed. Fauna spotter and reports issued for clearing works on PPA. Minor clearing was completed at the end of the Gas Access Track near Old Punt Rd (HDD1), at the rear of the Hexham site (HDD3) and end of Main Access Road to site by Lucas Engineering. NC-1 Pre-clearance inspection reports indicated no endangered flora to be cleared for works however a fauna spotter was not used as per condition by Lucas Engineering. No further clearing required for the project.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
Management of Impacts on Flora					
B2	The Proponent shall take reasonable and feasible steps to minimise the area of native vegetation clearing required for the project. Areas of vegetation to be cleared as part of the project shall be clearly demarcated prior to the commencement of clearing activities. Procedures for the minimisation and management of vegetation clearing shall be detailed in the Flora and Fauna Management Plan required under condition B57.	Pre clearing	AGL to engage ecologist CBI	Compliance Closed – CBI Closed – Lucas Engineering	AGL received letter from ecoBiological on 14-May-12 outlining steps taken to comply with the condition. The Flora & Fauna Management Sub Plan contains details on clearing. The CBI FFMSP has been submitted to the Director-General as part of the CEMP and approved for all subcontractors Clearing limited to marked areas. No further clearing required for the project.
B3	The Proponent shall construct the project in a manner that avoids direct and indirect impacts to those areas mapped as "(4) – Freshwater Wetland Complex" and "(7) – Phragmites Rushland" in Figure 7 – Vegetation Communities in Ecological Assessment: Newcastle Gas Storage Facility Project (ecoBiological, May 2011), included as Appendix 7 to the EA. The suitably-qualified ecologist required under condition B1 shall be engaged for the purpose of advising on measures to avoid potential direct or indirect impacts.	Pre-construction – Stage 2 Construction	AGL CBI	Compliance Closed	Letter from EcoBiological dated 01-Dec-12 confirming work has been completed for Stage 1. Vegetation communities map included as Figure 1 in FFMSP The areas referred to in this condition are relevant to the pipeline construction and crossing over the Hunter River which is part of Stage 2 – pipeline was installed by HDD to avoid any impacts to these communities.
B4	Prior to the commencement of construction, appropriately timed and targeted surveys should be undertaken to determine the absence/presence of the following taxa for which general baseline vegetation surveys are not considered appropriate: (a) Tall Knot-weed (*Persicaria elatior*); (b) Small Water-ribbons (*Maundia triglochinoides*); and (c) Horned Pondweed (*Zannichellia palustris*).	Pre-construction	AGL	Compliance Closed	Letter from ecoBiological on 14-February-12 confirming the survey work undertaken and compliance with this condition. Offset Strategy report prepared by ecoBiological dated May 2012, Medowie Conservation Area Offset Monitoring Protocol prepared by ecoBiological dated May 2012,

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
	Any impacts on these taxa must be included the Biodiversity Offset Strategy under condition B13 and Biodiversity Offset Package under condition C2.				Also refer to correspondence to OEH and PSC dated 1-Jun-12 as evidence of consultation with both OEH and PSC. 20-June: Refer to additional correspondence from PSC as evidence of consultation. 15-Aug-12: Approval received from the Director General.
B5	Prior to the commencement of vegetation clearing works, the site shall be subject to further confirmatory survey work to determine the number of Earp's Gum individuals to be removed. The number, quality and extent of these individuals shall be used to inform the Biodiversity Offset Strategy under condition B13 and Biodiversity Offset Package under condition C2.	Pre-clearing	AGL CBI	Compliance Closed	Letter from ecoBiological on 14-May-12 confirming the survey work undertaken and compliance with this condition. FFMSP - Table 8-10
B6	Prior to the commencement of vegetation clearing works, the site shall be subject to further confirmatory survey work to determine the hollow-bearing trees to be removed. The number and quality of these tree hollows shall be used to inform the Biodiversity Offset Strategy under condition B13 and Biodiversity Offset Package under condition C2.	Pre-clearing	AGL CBI	Compliance Closed	Letter from ecoBiological on 14-May-12 confirming the survey work undertaken and compliance with this condition. FFMSP - Table 8-7

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
B7	With the exception of clearing necessary for the gas pipeline access corridor, and access road and utility corridor, on the site, the Proponent shall ensure that vegetation mapped as "Preferred Koala Habitat" in Figure 12 – Revised Koala Habitat Mapping in Ecological Assessment: Newcastle Gas Storage Facility Project (ecoBiological, May 2011), included as Appendix 7 to the EA, is not directly or indirectly affected in the carrying out of the project.	Pre-construction Construction	AGL CBI	Compliance Closed	CEMP – Appendix A6 includes environmental constraints map. FFMSP –Appendix B, Tables 8-9 & 8-12 Site inspections confirm construction area delineated with temporary fencing. Clearing works now completed for Stage 1 with all clearing within Project Footprint
Riparian Areas					
B8	Prior to the commencement of works with the potential to directly or indirectly affect riparian areas, the Proponent shall engage a suitably-qualified ecologist (required under condition B1) to survey and record the condition of those potentially-affected areas.	Pre-clearing – Stage 2	AGL CBI Lucas Engineering	Compliance Closed	Primarily refers to Stage 2 of the Project. There is one culvert crossing for this stage therefore reference to this condition is required. Shawn Capararo from Ecobiological engaged for all pre construction works including riparian works. Letter from Ecobiological on 14-May-12 confirming the survey work undertaken and compliance with this condition. HDD under riparian areas therefore no riparian areas to be cleared/impacted under current project design.
B9	Within six months of the conclusion of construction activities directly or indirectly affecting riparian areas, the Proponent shall implement a programme to rehabilitate those areas to a standard of equal or better condition than surveyed under condition B8, unless otherwise agreed by the Director-General. Riparian rehabilitation works shall be undertaken in consultation with NOW and DPI (Fisheries).	Pre-construction Construction	AGL	Compliance Closed	VRMSP includes requirement in Table 8-5 No riparian areas cleared. Stage 2 works – pipe installed under Hunter River.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
B10	Unless otherwise agreed by the Director-General, the Proponent shall monitor and maintain the condition of rehabilitated riparian areas until such time as those areas have been verified by a suitably-qualified ecologist (required under condition B1) as being well-established, in good health and self-sustaining.	Pre-construction Construction	AGL CBI Lucas Engineering	Compliance Closed	VRMSP includes requirement in Table 8-5 Stage 2 works completed using HDD under and near Hunter River- no riparian areas disturbed. No riparian areas to be cleared under current project design
Management of Impacts on Fauna					
B11	Prior to the commencement of vegetation clearing works in the site, the site shall be subject to survey work to identify the presence of Koala (*Phascolarctos cinereus*) individuals. All Koala individuals identified on the site shall be allowed to self-translocate in the first instance prior to any other translocation methods being considered. If self-translocation proves impracticable, human-assisted translocation will be conducted and the Koalas located on the gas storage facility site shall be translocated to an appropriate, safe location off-site. Survey and translocation of Koala individuals shall be conducted in accordance with the Port Stephens Comprehensive Koala Plan of Management and to meet the requirements of the OEH. If human-assisted translocation is conducted, it shall be undertaken by a suitably qualified and experienced ecologist in Koala management and in accordance with Policy for the Translocation of Threatened Fauna in NSW (NPWS, 2001).	Pre-clearing	AGL CBI Lucas Engineering	Compliance Closed	FFMSP – Appendix B Table 8-12 No koalas reported to be encountered during clearing works (Report: Vegetation Clearing for Newcastle Gas Storage Facility, Ecobiological (November 2012)). Clearing activities completed for Stage 1 Minor clearing completed at the end of the Gas Access Track near Old Punt Rd (HDD1) and at the rear of the Hexham site (HDD3) by Lucas Engineering. No koalas reported to be encountered during these works. No further clearing to be completed.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
B12	Prior to the commencement of vegetation clearing and construction works, the Proponent shall demonstrate that it has undertaken a programme of trapping on the gas storage facility site with the aim of collecting any New Holland Mouse (*Pseudomys novaehollandiae*) individuals. All New Holland Mouse individuals shall be translocated to an appropriate, safe location off-site. Trapping, collection and translocation of New Holland Mouse individuals shall meet the requirements of any guidelines issued by DSEWPaC.	Pre-clearing	AGL CBI	Compliance Closed	Trapping program outlined in the FFMSP Appendix B Table 8-11 Trapping completed prior to clearing works at four locations covering three different periods. No New Holland Mouse individuals were trapped (Report: Vegetation Clearing for Newcastle Gas Storage Facility, Ecobiological (November 2012)).
Biodiversity Offsets					
B13	Prior to the commencement of vegetation clearing or construction works, the Proponent shall prepare a Biodiversity Offset Strategy in consultation with the OEH and Port Stephens Council, and for the approval of the Director-General. The purpose of the Strategy shall be to provide high-level direction to guide the development of the Biodiversity Offset Package required under condition C2. The Biodiversity Offset Strategy shall be prepared by a suitably-qualified ecologist consistent with the Biobanking Methodology under the Biobanking and Offsets Scheme outlined in Biobanking Assessment Methodology and Credit Calculator Operational Manual (DECC, 2009), and shall include: (a) consideration of all native vegetation losses and the adequacy of the proposed offset; (b) an offset area for the Earp's Gum commensurate with the area occupied by the Earp's Gum individuals to be removed from the site, and including successful planting of *Eucalyptus parramattensis* subsp. *decadens* trees at a ratio of at least 3:1 and the maintaining of these trees until established.	Pre-clearing Pre-construction	AGL	Compliance Closed	Offset Strategy report prepared by ecoBiological dated May 2012. Medowie Conservation Area Offset Monitoring Protocol prepared by ecoBiological dated May 2012 Draft Conservation Agreement for Lot 20 at 3 Old Swan Bay Road, Medowie Draft Conservation Agreement for Lot 16 at 218 Old Swan Bay Road, Medowie. Refer to following sections of the Offset Strategy Report as to where matters identified in B3 are considered: a) Refer Section 3.1 and 3.3 b) Refer Chapter 4. Four Earp's gums to be replaced. Target of 60 plants established with OEH. Hunter Region Botanic Gardens have identified areas suitable for planting

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
	(c) an offset ratio for tree hollows of no less than 1:1, to be delivered through nest boxes or other measures agreed with the OEH; (d) habitat offset measures for Koalas (*Phascolarctos cinereus*) and New Holland Mouse (*Pseudomys novaehollandiae*); (e) demonstration of how the offset would 'improve or maintain' biodiversity values; (f) the proposed offset ratios and connectivity improvements; (g) proposed management actions; (h) demonstration of how the strategy was prepared in accordance with the OEH's Principles for the Use of Biodiversity Offsets in NSW; and (i) measures to ensure in-perpetuity the conservation commitment.				c) As agreed by OEH two large offset areas identified have adequate hollow bearing trees available to mitigate need for nest boxes d) Koala – 11.8ha offset area provided to offset loss of 0.7ha. New Holland Mouse - 25 ha preferred habitat and 80ha sub optimal habitat to replace 12ha sub optimal habitat. e) Refer Chapter 5 – improvement of biodiversity values in offset areas f) Refer Chapter 3 g) Contained within Voluntary Conservation Agreements h) 13 principles addressed in Chapter 5 i) Refer Chapter 3 and Chapter 5. Correspondence from DP&I accepting Strategy AGL submitted Strategy to PSC via email on 01.06.12, and PSC emailed DP&I on 13.6.12 indicating that they had been consulted, and provided comments. OEH emailed DP&I on 01.06.12 advising that they had been consulted.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
HAZARDS AND RISKS					
B14	The Proponent shall establish and maintain Asset Protection Zones around the project, being no less than 25 metres around the gas plant site and no less than 31 metres around the processing plant and storage tank. The Earp's Gum individuals are to be retained within the asset protection zones where appropriate canopy distances exist. The understory in the vicinity of retained Earp's Gum individuals is to be appropriately managed to minimise fire risk. Details shall be incorporated into the Fire Safety Study required under B16(a).	Pre-construction Construction	CBI – design AGL - review	Compliance Closed	Included in FFMSP Appendix B Table 8-5 Bush Fire Included in Fire Safety Study – Section 5.4.1
B15	During construction, the Proponent shall store and handle all dangerous goods, as defined by the Australian Dangerous Goods Code, strictly in accordance with:(a) all relevant Australian Standards; and(b) DECC's Environment Protection Manual Technical Bulletin -– Bunding and Spill Management. In the event of an inconsistency between the requirements listed from (a) to (b) above, the most stringent requirement shall prevail to the extent of the inconsistency.	Construction	CBI PowerServe Lucas Engineering Downer EDI	Compliance Open	CBI Dangerous Goods and Hazardous Materials Handling Management Sub-Plan Section 1.5.2 Minor amounts of fuel and oils currently kept at all sites. Site inspections indicate small fuel cans are stored on self-contained bunds. Refuelling done primarily by licensed refuelling truck. Form completed prior to any chemicals coming onto Primary Project Area with approval by CBI Environment Manager and Safety Manager required. MSDSs and register maintained on ChemWatch. Register downloaded and added to MSDS folder. PowerServe/Downer EDI generator linked to external fuel supply, which means that internal generator bund is unable to contain 110% of fuel supply in case of any leaks. PowerServe/Downer EDI include the following additional checks to the daily site closure checklist: prior to leaving site at end of each day:

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					"Has the internal bund been checked for fuel? Has the fuel line been isolated? "
B16	At least one month prior to the commencement of construction of the project, except for construction of those preliminary works that are outside the scope of the hazard studies (including such works as vegetation clearing and site preparation which would not influence or pre-empt the outcomes of the hazards studies), or within such further period as the Director-General may agree, the Proponent shall prepare and submit for the approval of the Director-General the following studies: (a) A **Fire Safety Study** prepared in accordance with and covering the relevant aspects in Hazardous Industry Planning Advisory Paper No. 2 – Fire Safety Study Guidelines (DoP, 2011) and Best Practice Guidelines for Contaminated Water Retention and Treatment Systems (NSW Government, 1994). The study shall also be submitted for approval to Fire and Rescue NSW and to the Rural Fire Service; (b) A **Hazard and Operability Study** for the project, chaired by a qualified person, independent of the project, approved by the Director-General prior to the commencement of the study. The study shall be consistent with the Department of Planning and Infrastructure's Hazardous Industry Planning Advisory Paper No. 8 – HAZOP Guidelines (DoP, 2011). The study report shall be accompanied by a programme for the implementation of all recommendations made in the report. If the Proponent intends to defer the implementation of a recommendation, reasons must be documented and justified; and	Pre-construction	a) AGL b) CBI c) AGL	Compliance Open	Letter to DP&I dated 19 June 2012 requesting approval to stage Fire Safety Study (FSS), Hazard and Operability Study (HAZOP), Final Hazard Analysis (FHA). Stage 1 – HAZOP, FSS and FHA August 2012 based on final design Stage 2 – update based on final designs – January 2013 Letter from DP&I dated 6 August 2012 approving staged approach with following requirements: 1. The HAZOP for the second stage should cover the interaction with already installed equipment; 2. The FSS for the second stage should be an update on the FSS for the first stage. (The site must have a single FSS covering the whole site.) 3. The FHA for the second stage should be an update of the FHA for the first stage. (As with the FSS, a single document must cover the whole site.) Meeting with RFS to discuss FSS scheduled 4 September 2012 Letter dated 19-June requesting for approval of a staged approach to the HAZOP Study, Fire Safety Study and Final Hazard Analysis Process 6-Aug-12: Approval received from Director General for the proposed staged submission approach.

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	(c) A **Final Hazard Analysis** of the project, consistent with Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis (DoP, 2011). The FHA shall report on the implementations of the recommendations of the Preliminary Hazard Analysis. Construction, other than of preliminary works (including such works as vegetation clearing and site preparation which would not influence or pre-empt the outcomes of the hazards studies), shall not commence until approval under this condition has been given by the Director-General and, with respect to the Fire Safety Study, approval has also been given by Fire and Rescue NSW and the Rural Fire Service.				28-Nov-12: Submission of Phase 1 Fire Safety Study and Hazop Report to DP&I. 10-Dec-12: Submission of Phase 1 Final Hazard Analysis to DP&I 19-Dec-12: Phase 1 Fire Safety Study approved by Rural Fire Service. 17-Jan-13: Phase 1 submission approved by DP&I. 5-Feb-13: Phase 1 Fire Safety Study approval by Fire & Rescue NSW 22-Apr-13: Approval of Hugh Howard as HAZOP facilitator for Jemena Connection Works. 6-Jun-13: Meeting held with FRNSW to discuss proposed mitigation to comments provided in February. 9-Sep-13: Submission of Phase 2 FSS to DoPI, FRNSW and RFS. 12-Sep-13: Phase 2 FSS approved by FRNSW. 16-Sep-13: Phase 2 HAZOP approval by DoPI. 19-Sep-13: Phase 2 FSS approved by RFS 27-Sep-13: Submission of Phase 2 FHA to DoPI 22-Oct-13: Phase 2 FSS approved by DoPI 31-Oct-13: Phase 2 FHA approved by DoPI 06-Dec-13: Approval of Chris Alexiou as HAZOP facilitator for LP Pipeline

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
					12-Sep-14: Submission of Phase 3 FSS, FHA, HAZOP report 23-Sep-14: Submission of Phase 3 FSS to FRNSW
B17	Prior to the commencement of the detailed design of the project, the Proponent shall consult with WorkCover with regard to complying with the regulations applicable to Major Hazard Facilities and shall obtain requirements for the preparation of the Site Risk Assessment and the Safety Case. The Proponent shall comply with all requirements issued by WorkCover.	Pre-detailed design	AGL CBI to assist	Compliance Closed	Meeting held with WorkCover on 18-April-2012. Requirements to be checked and included in Site Risk Assessment and Safety Case six months prior to commissioning of project NGSF determined as a Major Hazard Facility by WorkCover in letter dated 19-Oct-2012. 15-Feb-13: Safety Case outline submitted to WorkCover. 10-May-13: Revision 1 of Safety Case Outline submitted to WorkCover 20-Aug-14: Safety Case submitted to WorkCover for review.B48

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B18	The Safety Case shall be prepared by the Proponent under the Major Hazard Facilities legislation and shall be submitted to WorkCover no later than six months prior to the commissioning of the project, or as otherwise agreed by WorkCover.	Construction Pre commissioning	AGL CBI to assist	Compliance Open	Safety Case to be prepared six months prior to commissioning 15-Feb-13: Safety Case outline submitted to WorkCover. 10-May-13: Revision 1 of Safety Case Outline submitted to WorkCover
DESIGN PRINCIPLES					
B19	Buildings and car parking associated with the proposed development should be designed with consideration to the general principles and objectives of Crime Prevention through Environmental Design (Australian Institute of Criminology, 1989).	Design	CBI	Compliance Closed	Final design includes following: • Security fence (with barbed wire) around the facility complying with AS 1725.1-2010 (drawing NGSF-CBI-ISBL-CI-DWG-5001) • CCTV cameras strategically positioned around the security fence and at the plant entry gate (drawing NGSF-CBI-ISBL-IC-DWG-9010) all communicating with the CCTV viewing station in the control building. All cameras are continuously recorded for up to 30 days. • Intrusion detection located all the way around the security fence (drawing NGSF-CBI-ISBL-IC-DWG-9020) communicating with the control room. The intrusion system is divided into zones approximately 100 meters in length that can signal the cameras to focus on the active zone • Card operated sliding security gates at the plant entry on the main access road as well as at the main entrance gate with CCTV cameras monitoring all of these entry points.

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					• Besides the vehicle entry sliding gates, there is only 1 personnel point of access into the admin building and this requires a key card to get beyond the reception area. • Car park is within sight from the admin/control building. • High pressure sodium roadway lighting will be provided for perimeter roads. High pressure sodium floodlights will be provided for the plant boundaries near the LNG tank. Both the roadway and floodlighting layouts will be designed to maintain an average illumination level of 2 lux at ground for the entire security fence line.
SOILS, WATER AND HYDROLOGY					
B20	Except as may be expressly provided by an Environment Protection Licence for the project, the Proponent shall comply with Section 120 of the *Protection of the Environment Operations Act 1997* during construction of the project.	Pre-construction Construction	CBI PowerServe Lucas Engineering Downer EDI	Compliance Open	Refer Surface Water Management Sub Plan and Soil Management Sub Plan. Included in EPL as Condition L1 Dewatering of excavations – water quality tested prior to groundwater recharge. Potable water sourced from Hunter Water used on sites.
B21	Erosion and Sediment controls consistent with Managing Urban Stormwater: Soils and Construction Manual (Landcom, 2004, or its latest version) shall be installed prior to the commencement of soil disturbing works and shall be maintained until such time as the disturbed areas have been rehabilitated.	Pre-construction Construction	CBI PowerServe Lucas Downer EDI	Compliance Open	Refer sub-contractors Soil Management Sub Plans Controls installed in all active areas – checks for integrity completed. Minor issues with maintenance of controls ongoing – noted in audit reports..

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B22	The Proponent shall carry out rehabilitation of disturbed areas progressively, and as soon as reasonably practicable following disturbance.	Pre-construction Construction	AGL CBI to advise when works completed and ready for rehabilitation Downer EDI Lucas Engineering	Compliant Open	Refer to CBI Vegetation Rehabilitation Management Sub Plan Appendix B – Table 8-5 Rehabilitation works have commenced. Logs for rehabilitation placed along cleared tracks, mulch retained and topsoil stored along gas access track. Logs emplaced, areas spray grassed and stabilised along Main Access Track on northern side. South side to be completed by Lucas Engineering. Northern and eastern sides of the electrical connection works bund wall to be vegetated once substation construction is completed. Hexham Receiving Area to be revegetated with grass and resurfaced once all works completed HDD1, HDD2, HDD3 works all completed – natural revegetation to occur. Gas Access track works completed with topsoil reinstated and mulch respread.
Construction Method					
B23	The Proponent shall apply the gas pipeline corridor construction methods generally in accordance with Table 2.2 of the PPR, at the locations specified.	Pre-construction Construction	AGL Lucas	Compliance Open	Gas pipeline installation has commenced at locations as per PPR. Method has changed from trenching to underboring to avoid impacts on ecological communities and riparian areas.

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Flooding					
B24	The Proponent shall ensure that all structures to be constructed below known flood planning levels are constructed of materials and with finishes that are resistant to floodwaters/ tides. Construction of the project shall be undertaken in accordance with the NSW Flood Plain Development Manual (DIPNR, 2005).	Pre-construction Construction	AGL	Compliance Open	Gas Storage Facility Design and Jemena Receiving Station above 1 in 100 year flood levels. Roads and structures as constructed drawings to confirm final levels once works finished.
Groundwater Monitoring Program					
B25	Prior to the commencement of construction, the Proponent shall develop a Groundwater Monitoring Programme in consultation with NOW and HWC and to the satisfaction of the Director-General. The programme shall detail the monitoring strategy that would be implemented to monitor the water quality impacts of the project on beneficial aquifers (including associated groundwater users, surface waters and groundwater dependent ecosystems). The programme shall: (a) identify surface and groundwater monitoring locations demonstrating their appropriateness for obtaining representative water quality and water level data on construction and operational impacts in relation to beneficial aquifers, groundwater users and surface waters (b) provide details of the monitoring points (including location, depth of monitoring, duration and frequency of monitoring and parameters to be monitored); (c) identify performance criteria, including monitoring criteria to detect early indicators of drawdown impacts or water quality impacts to beneficial aquifers;	Pre-construction	AGL	Compliance Closed	Groundwater Management Sub Plan – sent in email to DP&I dated 11 July 2012 Groundwater Monitoring Program – letter from DP&I dated 10/08/2012 accepting GMP. Correspondence from HWC dated 3 August 2012 and NOW dated 9 August 2012 supporting consultation requirement. Email from HWC 31 October 2012 indicating satisfaction with GMSP. Email to DP&I 9 August 2012 with correspondence attached endorsing GMSP from NOW a) GMSP - Groundwater monitoring bore locations – Figure 3. Also refer to Table 2-1. One background and 5 downstream locations (towards Tomago aquifer extraction site) 4 internal locations to obtain background for site. Surface water monitoring locations include in surface water management plan GMP – Section 4

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	(d) identify the frequency of reporting on monitoring results; (e) identify procedures for contingency or remedial action where adverse impacts are identified, such that the adverse impacts are remediated prior to any impact to other groundwater users, and/ or rehabilitation measures applied where the project is identified as adversely affecting any groundwater dependent ecosystems/ communities; and (f) identify mechanisms for the regular review and update of the programme in consultation with NOW and HWC as required. In submitting the programme for the Director General's approval, the Proponent shall provide written evidence of consultation with NOW and HWC on the robustness and acceptability of the monitoring programme, including issues raised by these agencies and how these have been addressed. The programme shall be reviewed and updated at the conclusion of construction activities.				b) GMSP - Appendix C includes baseline water quality, depth. Duration and frequency of monitoring include in Table 5-2 Groundwater Monitoring Requirements GMP – Section 4 c) GMSP - Performance criteria included in Section 5.1.1 for water quality and changes in water levels (using CUMSUM) GMP – Section 4.2 and Appendix A d) GMSP - Frequency of reporting include in Table 5-1 GMP - Section 4.1 e) GMSP - Contingency Plan Flowchart Figure 5 and Appendix E for spills GMP - Section 4.3 f) GMSP - Section 3 and Section 5 g) GMP – Section 4.4
Stormwater Management					
B26	Prior to the commencement of construction, the Proponent shall engage an independent and suitably qualified expert to the satisfaction of HWC, to undertake peer reviews of the design, construction and Open maintenance of the stormwater management system. The reviews shall: (a) provide HWC with a peer review of the detailed design of the stormwater management system;	Pre-construction	AGL	Compliance Open	Confirmation email by Axel Hanson from Hunter Water Corporation dated 2-May-12 approving SMEC as the independent peer reviewer. Review of design completed with email received from HWC 2 May 2012 with recommendations. Meeting held with SMEC 20 July 2012 to discuss review and recommendations.

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	(b) investigate the constructability, effectiveness and durability of the stormwater management system; (c) be undertaken to ensure that the system is constructed as designed to the schedule agreed between the Proponent and HWC; and (d) provide HWC with inspection reports on the adequacy of the stormwater management system in accordance with the inspections identified in the schedule referred to in (c). The review reports shall be incorporated into the compliance tracking programme required under condition B54 and shall include, but not necessarily be limited to: annual reports of Stormwater systems Performance supplied to HWC. Any faults identified as a result of the inspection reports identified in (d) shall be rectified and re-inspected at the Proponent's expense.				Submitted to DP&I on 8 June 2012. Approval by SMEC of NGSF stormwater design received 19 April 2013. Annual inspection/review report issued 30 June 2014 by SMEC. (available on project website). Report states that the standard of construction achieves requirements of the Approved Stormwater Management Philosophy and the reviewed Construction Documentation – outstanding tem includes the establishment of vegetation in the wetland and holding pond. These works are expected to be completed last quarter of 2014.
NOISE					
Construction Hours					
B27	Subject to conditions B28 and B29, construction works (other than horizontal directional drilling (HDD)) that would generate audible noise at any sensitive receiver shall only be undertaken during the following hours: (a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive; (b) 8:00 am to 1:00 pm on Saturdays; and	Pre-construction Construction	CBI Lucas Engineering PowerServe	Compliance Open	Noted - hours included in NVMSP. NVMSP sent to DP&I as part of CEMP EPL hours align with MCoA. Out of hours work completed – forms completed and noise levels checked to confirm inaudible at site boundary.

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	(c) at no time on Sundays or public holidays. This condition does not apply in the event of a direction from police or other relevant authority for safety reasons or emergency work to avoid the loss of lives, property and/or to prevent environmental harm.				HDD works 24hrs in accordance with condition. Works now completed Other works undertaken during standard work hours identified in Table 3-3 of NVMP.
B28	Any work generating high noise that has impulsive, intermittent, low frequency or tonal characteristics, including jack hammering, pile driving, rock hammering, rock breaking, saw cutting, sheet piling or vibratory rolling, shall only be undertaken: (a) between the hours of 8.00 am and 6.00 pm Monday to Friday; (b) between the hours of 8.00 am and 1.00 pm Saturday; and (c) in continuous blocks of no more than three hours, with at least one hour respite between each block of work generating high noise impact, where the location of the work is likely to impact the same receivers; except as otherwise approved by the Director-General. For the purposes of this condition "continuous" includes any period during which there is less than a one hour respite between ceasing and recommencing any of the work the subject of this condition.	Pre-construction Construction	CBI Lucas Engineering PowerServe Downer EDI	Compliance Open	Vibratory works not completed recently. Previously works completed in afternoon- vibratory roller and vibro piling. Daily checklists for CBI includes check for activities and if noticeable at site boundary. Later start time communicated to Daracon. HDD works likely to generate high noise identified as undertaken in standard work hours as per consent condition. Noisiest equipment is associated with the HDD for which an exemption for 24 hour operation is provided for in consent condition B27. All HDD works now completed

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B29	Construction outside of the hours specified under condition B27 or B28 may be varied for works as approved through the out-of-hours work protocol required as part of the Construction Noise Management Plan under condition B57 of this approval. Any request to alter the hours of construction shall: (a) be considered on a case-by-case basis; (b) be accompanied by details of the nature and need for activities to be conducted during the varied construction hours and any other information necessary to reasonably determine that activities undertaken during the varied construction hours will not adversely impact on the acoustic amenity of receptors in the vicinity of the site; and (c) require that affected residential receivers are informed of the timing and duration of any construction activities approved under this condition at least 48 hours before that work commences.	Pre-construction Construction	a) CBI b) CBI c) CBI to notify AGL >72 hrs prior to enable AGL to update website if any impacted residential receivers Lucas Engineering PowerServe	Compliance Open	CBI NVMSP – Appendix B Table 8-2 Refer to MCoA B57(f) – OOHW protocol developed to include requirements. Forms completed detailing required information. Nearest potentially affected receiver Botanic Gardens – all notifications communicated to community group for notification as required. Checks completed for noise at boundary of site. Community newsletters and project updates notifying progress and expected works on website. Receptors located at Hexham and along pipeline route letterbox dropped prior to works commencing. OOHW protocol identified in NVMSP for Lucas. Not required in compliance period.
Construction Noise Criteria					
B30	The Proponent shall implement all reasonable and feasible noise mitigation measures to minimise noise generated by construction of the project, consistent with the requirements of the Interim Construction Noise Guidelines (DECC, July 2009).	Pre-construction Construction	CBI PowerServe Lucas Engineering Downer EDI	Compliance Open	NVMSP – Appendix B (all tables) Noise levels are monitored by CBI environment staff and any issues noted in daily diary notes or the weekly report. ER site inspections note noise levels reasonable Lucas Engineering complete spot checks on equipment.

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B31	Prior to the commencement of construction, the Proponent shall undertake a noise assessment to identify all sensitive receivers where the construction noise management goals, exceed the ICNG construction noise goals for that receiver. The results shall be included in the Construction Noise Management Plan required under condition B57 of this approval.	Pre-construction – Stage 5	AGL	Compliance Closed	Note: This condition is only applicable to Stage 5 High Pressure Pipeline construction in July 2013 as confirmed by Ms Anna Timbrell (DP&I). NVMSP – Table 2-1 Sensitive Receivers. Predicted noise impacts included in Section 2.3 Noise and Vibration Assessment – NGSF, Atkins Acoustics and Associates Pty Ltd, May 2011 indicated no exceedances of ICNG construction noise management goals for the works at any receivers.
TRAFFIC AND TRANSPORT					
B32	Prior to the commencement of construction of the project, the Proponent shall commission a suitably qualified road infrastructure specialist to assess the condition of all public roads proposed to be traversed by construction traffic associated with the project (including over-mass or over-dimensional vehicles) in consultation with Council and the RMS, and to identify any upgrade requirements to accommodate project traffic for the duration of construction (including culvert, bridge and drainage design; intersection treatments; vehicle turning requirements; and site access), having regard to peak traffic volumes. The Pre-Construction Road Inspection Report shall be submitted to the Director-General prior to the commencement of construction works, clearly identifying recommendations made by the Council and the RMS and how these have been addressed.	Pre-construction	CBI AGL – submission of report	Compliance Closed	Refer letter report from Better Transport Futures 6 July 2012 indicating the current road network in the vicinity of the subject site can accommodate the volume and size of the vehicles associated with the construction phase of the Gas Storage Facility and no road upgrades are required. RMS not contacted for Old Punt Rd component as Council Road. TAC Northern Access Road private therefore liaison with RMS or PSC not required. Submitted to DP&I 11 July 2012 Email from PSC (Michael Viola) dated 04/04/2013 confirming council requirements regarding any road upgrades.

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	The Proponent shall ensure that all upgrade measures identified in the report are implemented to meet the reasonable requirements of Council and the RMS, prior to the commencement of construction.				
B33	A commercial-type vehicular crossing shall be constructed across the public footway at the proposed driveway entrance/ exit to the Hexham receiving station site at the expense of the Proponent. The crossing shall be designed and constructed in accordance with Newcastle City Council's A017 Series (Concrete Vehicular Crossings) design specifications.	Pre-construction – Stage 2 Construction	AGL Lucas Engineering	NA Open	Works have commenced at Hexham and are ongoing. Crossing to be completed once construction substantially completed.
B34	Redundant existing vehicular crossings at the Hexham receiving station site shall be removed at the expense of the Proponent and the public footway and kerb shall be restored to be consistent with existing infrastructure.	Pre-construction – Stage 2 Construction	AGL	NA Open	Works have commenced at Hexham. Works to be completed once construction substantially completed.
AIR QUALITY					
Odour					
B35	During construction, the Proponent shall ensure no offensive odour as defined under the *Protection of the Environment Operations Act 1997* is emitted from the project site.	Pre-construction Construction	All	Compliance Open	Noted – Project Air Quality Management Sub Plan includes best practise mitigation measures to minimise odour. AQMSP submitted to DP&I for approval with CEMP. No odour generating activities noted during ER site inspections to date.

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Dust					
B36	The Proponent shall employ reasonable and feasible measures to ensure that construction activities associated the project are undertaken in a manner that minimises or prevents the emission of dust.	Pre-construction Construction	All	Compliance Open	Noted – Project AQMSP includes best practise mitigation measures to minimise odour. AQMSP submitted to DP&I for approval with CEMP. Dust cart noted in use during inspections on CBI site. Daily checklists include monitoring for dust levels Subsoil and topsoil movement primarily completed. Topsoil will be moved during rehabilitation activities.
METEOROLOGY					
B37	Prior to the commencement of construction works, the Proponent shall establish a meteorological monitoring station on the site, or at a representative location off-site, for the purpose of continuously monitoring meteorological conditions on the site for the life of the project. The meteorological monitoring station shall be located, operated and maintained to meet the requirements of the OEH. The Proponent may satisfy this condition by demonstrating to the satisfaction of the OEH that it has access to data from an existing meteorological monitoring station, representative of conditions on this site, and operated by a third party.	Pre-construction	AGL	Compliance Closed	Refer to letter from TAC on 21-Mar-12 granting access to meteorological monitoring station. 5-Apr-13: Peter Jamieson (Head Regional Operations Unit - Hunter) of EPA confirmed TAC monitoring station is acceptable.

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HERITAGE					
B38	The Proponent shall employ a suitably-qualified archaeologist to attend site clearing and vegetation removal works within the gas storage facility site and within riparian areas of the Hunter River, and any activities with the potential to directly or indirectly impact on subsurface heritage items. The archaeologist shall be employed for the purpose of identifying and advising on potential Aboriginal heritage impacts, including appropriate mitigation and management, as required under these conditions of approval. Items of heritage significance that may be uncovered during construction of the project shall be managed in accordance with the approved Cultural Heritage Management Plan under condition B57.	Pre-clearing	AGL	Compliance Open	RPS appointed archaeologists. Refer to MCoA B57 Report issued by RPS 21 November 2012 detailing site inspections and finds. Six cultural heritage items were recorded with GPS coordinates taken and photographed. They are being held onsite in the temporary administration office and once the NGSF works are completed will be managed in accordance with a Care and Control agreement developed between the Aboriginal community stakeholder groups and AGL (refer Section 5 CBI CHMP 2012). The monitoring report includes a record of the monitoring units, documentation of Aboriginal sites, as well as assessment of significance. Further scans and finds have occurred since RPS report issued. Final register to be developed and issued once construction substantially completed. Finds will be registered with AIHMS/EPA once items are placed in final location which fulfils legislative requirements (verbal advice RPS, January 2013). No clearance of vegetation in the gas storage facility site or within riparian areas of Hunter River during the reporting period.

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					Test pits in Old Punt Road (near Forgacs) largely through imported fill. Subsoil works in previously disturbed areas or areas of fill. No further clearing works to be completed for Project.
B39	Registered Aboriginal stakeholders shall be invited to attend site clearing and soil disturbance work to assist in the identification of heritage items, including potential mitigation and management measures.	During clearing	AGL	Compliance Closed	CBI Cultural Heritage Management Sub Plan – Section 5.3.1 Heritage inspections completed 30/08/2012, 07/09/2012, 24/09/2012, 15/10/2012, 24/10/2012, 23/01/2013, and 11/05/2011. No site clearing or vegetation removal works within the gas facility site or within riparian areas of Hunter River during period. Works in previously disturbed areas or areas of fill.
B40	Where reasonable and feasible, the Proponent shall remove vegetation from the site with the aim of avoiding or minimising the need to disturb the underlying soil.	Pre-construction Construction	CBI	Compliance Closed	Requirement is detailed in following documents: • EWMS – Clearing and Grubbing • EWMS – Topsoil stripping and stockpiling • FFMSP – Appendix B Table 8-9 point 14 Site inspection during heritage scan after clearing commenced on 30/08/2012 indicates vegetation was removed with minimal disturbance to allow for heritage inspections to occur prior to land disturbance.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
WASTE MANAGEMENT					
B41	The Proponent shall not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site during construction, except as expressly permitted by a licence under the *Protection of the Environment Operations Act 1997*, if such a licence is required in relation to that waste.	Pre-construction Construction	CBI Lucas Engineering PowerServe Downer EDI	Compliance Open	Refer Waste Management Sub Plan (WMSP) Site does not accept waste. Gravel material used for onsite roads (pipeline track and main access road) sourced from Hanson's Brandy Hill Quarry – spot check of delivery dockets completed. Waste bins noted around sites. Port Stephens Council following up waste dumping along Old Punt Road.
B42	The Proponent shall maximise the reuse and/or recycling of construction waste materials generated on site, to minimise the need for treatment or disposal of those materials outside the site.	Pre-construction Construction	CBI Lucas Engineering PowerServe Downer EDI	Compliance Open	Refer Waste Management Sub Plan (WMSP) – all and Appendix A. All material tracked off site entered in waste register. Subsoil deemed unsuitable for reuse on-site has been screened to enable reuse. Bulk of mulch went to Austar mine for use in rehabilitation works. Extra mulch to Lake Macquarie Council. Excess logs to Newcastle Earthmoving for future use. Scrap metal and concrete recycled

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B43	The Proponent shall ensure that all liquid and/or non-liquid construction waste generated by the project is assessed and classified in accordance with the Waste Classification Guidelines (DECC 2008, or any future guideline that may supersede that document) and where removed from the site is only directed to a waste location lawfully permitted to accept those materials.	Pre-construction Construction	CBI Lucas Engineering PowerServe Downer EDI	Compliance Open	Refer Waste Management Sub Plan (WMSP). Waste Register maintained recording all movements. Waste generated primarily dry waste. Soil contaminated from oil spills tracked under the regulated waste system and disposed to authorised waste facility. Excavated material from Old Punt Rd treated as PASS tested against Waste Classification Guidelines and disposed as solid waste. Waste from HDD process tested prior to disposal

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
VISUAL AMENITY					
B44	The Proponent shall: (a) take all reasonable and feasible measures to mitigate off-site lighting impacts from the construction of the project; and (b) ensure that all external lighting associated with construction of the project complies with Australian Standard AS4282 – 1997 – Control of the Obtrusive Effects of Outdoor Lighting. This condition does not apply to lighting required for aviation safety.	Pre-construction Construction	CBI	Compliance Open	CBI CEMP has been updated to refer to use of directional lighting. Refer Table 12-5 Flora and Fauna External lighting installed on site office – check indicates directional towards ground.
AIR SAFETY					
B45	At least one month prior to the commencement of construction, the Proponent shall notify the RAAF Aeronautical Information Service of the location and heights of tall structures that are 30 metres or more above ground level within 30 kilometres of an aerodrome, or 45 metres of more above ground level elsewhere.	Pre-construction	AGL	Compliance Closed	Notification letter sent to RAAF on 11 May 2012. Construction commence 27 August 2012 25-Feb-13: Detailed coordinates and height of tank provided to RAAF. Also requested air space restriction over NGSF, but rejected on 28-Jun-13.
INFRASTRUCTURE, SERVICES AND ANCILLARY FACILITIES					
B46	The Proponent shall undertake all necessary alterations to existing public utility installations to meet the reasonable requirements of, and at no expense to, the relevant public utility authority.	Pre-construction Construction	CBI AGL	NA Open	Commitment is included in CBI CEMP (p 37) No alterations to existing public utility installations have been completed to date.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
B47	The Proponent shall ensure that road surfaces – and any other road-related infrastructure including drainage, street lighting, street furniture or underground facilities – disturbed or damaged during construction, are restored to meet the reasonable requirements of, and at no expense to, the relevant road authority.	Pre-construction Construction	CBI AGL Lucas Engineering Downer EDI	Compliance Closed	Commitment is included in CBI CEMP (p 37) Existing road surfaces disturbed on Old Punt Rd have since been restored. HDD works completed along Old Punt Road. No other road surfaces etc. expected to be disturbed during remaining works
B48	The Proponent shall design and provide on-site car parking, driveways, parking bays, vehicular turning areas, letterboxes, landscaping and drainage in consultation with and to meet the reasonable requirements of the relevant local council.	Pre-construction Construction	CBI AGL	Compliance Open	Commitment is included in CBI CEMP (p 37). Applicable to pipeline scope of works. Final design to be checked for compliance with PSC requirements 5-Dec-13: Design of on-site parking, parking bays, vehicular turning areas, landscaping and drainage was submitted to PSC for comment. No comment was received.88

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT					
Provision of Electronic Information					
B49	Prior to the commencement of construction, the Proponent shall establish a dedicated website or maintain dedicated pages within its existing website for the provision of electronic information associated with the project. The Proponent shall publish and maintain up-to-date information on this website or dedicated pages including, but not necessarily limited to: (a) the status of the project; (b) a copy of this approval and any future modification to this approval; (c) a copy of each relevant environmental approval, licence or permit required and obtained in relation to the project; (d) a copy of each plan, report, or monitoring programme required by this approval; and (e) details of the outcomes of compliance reviews and audits of the project.	Pre-construction	AGL – update All subcontractors – content	NC-2 Open	http://agk.com.au/newcastle/index.php/the-project/ a) background for approvals and current status include on project page. Last newsletter issued Autumn 2013 which is loaded onto the News, Publication and other Media webpage. b) Link to copy of approval included under Environment page c) copy of relevant approval includes link to DP&I website d) A copy of the CEMP and sub plans required under the MCoA have been loaded onto website – environment page with exception of Downer EDI (JRS) works (NC-2) e) All ER audits completed to date loaded onto website – environment page

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
Community Information Plan					
B50	Prior to the commencement of construction, the Proponent shall prepare and implement a Community Information Plan which sets out the community communication and consultation processes to be implemented during construction and operation of the project. The Plan shall include, but not be limited to: (a) procedures to inform the local community of planned investigations and construction activities, including blasting works (if any); (b) procedures to inform the relevant community of construction traffic routes and any potential disruptions to traffic flows and amenity impacts; (c) procedures to inform the community where work outside the construction hours specified in condition 0, in particular noisy activities, has been approved; and (d) procedures to inform and consult with affected landowners to rehabilitate impacted land.	Pre-construction	AGL to develop plan CBI to implement	Compliance Closed	Provided in the Community Engagement Plan (Document no: NGSF-AGL-NAS-PM-PLN-0002) - Section 2 a) Section 6.1 b) Section 6.1 c) Section 6.1 d) Section 6.1

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
Complaints Procedure					
B51	Prior to the commencement of construction, the Proponent shall ensure that the following are available for community complaints for the life of the project (including construction and operation) or as otherwise agreed by the Director-General: (a) a 24-hour telephone number on which complaints about construction and operational activities at the site may be registered; (b) a postal address to which written complaints may be sent; and (c) an email address to which electronic complaints may be transmitted. The telephone number, postal address and email address shall be advertised in a newspaper circulating in the area of the project, on at least one occasion prior to the commencement of construction; and at six-monthly intervals during construction and for a period of two years following commencement of operation of the project. These details shall also be provided on the Proponent's internet site required by condition B49. The telephone number, the postal address and the email address shall be displayed on a sign near the entrance to the construction site(s), in a position that is clearly visible to the public.	Pre-construction	AGL - to publicise availability of these communication channels to local community.	Compliance Open	Provided in the Community Engagement Plan (Document no: NGSF-AGL-NAS-PM-PLN-0002) Project signboards have been erected on site at Hexham and Tomago with contact details a, b, c advertised on project website – details also included in Newspaper advertisements published in Port Stephens Examiner and Newcastle Herald. All advertisements loaded onto website – news, publications and media page Signage located at entrance to site which includes contact details.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
B52	The Proponent shall record details of all complaints received through the means listed in condition B51 of this approval in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to: (a) the date and time of the complaint; (b) the means by which the complaint was made (telephone, mail or email); (c) any personal details of the complainant that were provided, or if no details were provided, a note to that effect; (d) the nature of the complaint; (e) any action(s) taken by the Proponent in relation to the complaint, including timeframes for implementing the action; and (f) if no action was taken by the Proponent in relation to the complaint, the reason(s) why no action was taken. The Complaints Register shall be made available for inspection by the Director-General upon request.	Pre-construction Construction	AGL - to record complaints using Consultation Manager.	Compliance Open	Requirements include in CBI CEMP Section 5.2.3 Complaints Handling which was submitted to DP&I for approval Community Engagement Plan refers to Section 6.5.5 for complaint protocol CEMP refers to Section 5.2.3 Protocol is for contractors to complete Complaints form and forward to AGL for inclusion in Complaints Database. Screen shots of complaints database confirm all requirements are recorded in the case of a complaint. There has been one noise complaint from noise generated from HDD 2 drilling at night. This complaint was closed out by Ray King (AGL) and Terry Gardiner (Lucas Engineering). Pilot hole drilling is now complete so noise generated from HDD operations are expected to reduce significantly. No further complaints received
B53	The Proponent shall provide an initial response to any complaints made in relation to the project during construction or operation within 48 hours of the complaint being made. The response and any subsequent action taken shall be recorded in accordance with condition B52. Any subsequent detailed response or action is to be provided within two weeks, or as otherwise agreed by the complainant/ Director-General.	Pre-construction Construction	AGL - to respond	Compliance Open	Complaints Handling section of CEMP indicates all complaints to be responded within 48 hours: • telephone complaints: verbal response is made within 4 hours; • written correspondence: acknowledged within 48 hours if a contact number is given and a written response within 5 days; • Email or fax: submission acknowledged within 24 hours

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
					One complaint received for Project – face to face visit completed by Ray King to discuss source of noise and details regarding project activities.
COMPLIANCE TRACKING PROGRAM					
B54	Prior to the commencement construction, the Proponent shall develop and implement a Compliance Tracking Programme, to track compliance with the requirements of this approval during the construction and operation of the project and shall include, but not necessarily be limited to: (a) provisions for periodic reporting of compliance status to the Director-General including at least prior to the commencement of construction of the project, prior to the commencement of operation of the project and within two years of operation commencement; (b) a programme for independent environmental auditing in accordance with AS/NZ ISO 19011:2003 - Guidelines for Quality and/or Environmental Management Systems Auditing; (c) procedures for rectifying any non-compliance identified during environmental auditing or review of compliance; (d) mechanisms for recording environmental incidents and actions taken in response to those incidents; (e) provisions for reporting environmental incidents to the Director-General during construction and operation; and (f) provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.	Pre-construction	AGL - establish processes/procedures to ensure compliance	IO Open	Compliance Tracking Program (Document No: NGSF-AGL-NAS-PM-PLN-0016) Compliance Tracking Register (Document No: NGSF-WPPM-NAS-PM-REG-0004-XLS) The relevant section of the CTP which addresses the requirements are as follows: a) Section 2.1 – reporting to be completed every six months (first report to cover period 28 August 2012 to 28 February 2013) b) Section 2.2 – programme includes 3 monthly audits by ER. Audits completed November 2012, March 2013, June 2013, September 2013, December 2013, March 2014. Next audit scheduled June 2014. c) Section 2.3 – Refers to Section 6.5 and 7.2 of Appendix A. Environment Action Register includes all actions arising from site inspections, audits. d) Section 2.4 – Refers to Section 6 of Appendix A. Includes need to report to AGL within 24 hours verbally and within 48hours a written report.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
					e) Section 2.5 - Verbal advice will be provided as soon as practicable after AGL becomes aware of the incident and written advice will be provided within seven (7) working days. IO - The ER is not always is notified immediately of all incidents requiring reporting to any agencies or the Director-General. f) Section 2.6 - Project Requirements Register Doc No. NGSF-WPPM-NAS-PM-REG-0004 – lists requirements and stakeholder responsible
CONSTRUCTION ENVIRONMENTAL MANAGEMENT					
Environmental Representative					
B55	Prior to the commencement of pre-construction or construction activities, the Proponent shall nominate for the approval of the Director-General a suitably qualified and experienced Environmental Representative(s) who is independent of the design, construction and operation personnel. The Proponent shall engage the Environmental Representative(s) prior to construction until at least six months after commencement of operation, or as otherwise agreed by the Director-General.	Pre-construction	AGL	Compliance Closed	The Environmental Representative (Megan McLachlan) has been approved by the Director-General on 25/06/2012. The alternate ER (Hamish Campbell) has been approved by the Director-General on 31/07/2012. Alternate ER Hamish Campbell replaced by Will Ellis and approved by DP&I in correspondence dated 29/11/2012. Alternate ER, Naomi Buchhorn approved by the Director-General in correspondence dated 23/02/2014. Construction activities commenced 27 August 2012

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
Construction Environment Management Plan					
B56	The Proponent shall prepare and implement a Construction Environmental Management Plan (CEMP) to outline environmental management practices and procedures to be followed during construction of the project. The Plan shall be shall be consistent with the Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004 or its latest revision). The Plan shall be prepared in consultation with Councils, NOW and HWC and include, but not necessarily be limited to: (a) a description of all relevant activities to be undertaken on the site during construction including an indication of stages of construction, where relevant; (b) identification of the potential for cumulative impacts with other construction activities occurring in the vicinity and how such impacts would be managed; (c) details of any construction sites and mitigation, monitoring, management and rehabilitation measures specific to the site compound(s) that would be implemented; (d) statutory and other obligations that the Proponent is required to fulfil during construction including all relevant approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies; (e) evidence of consultation with relevant public authorities required under this condition and how issues raised by the agencies have been addressed in the plan;	Pre-construction	CBI (a-c and f-j) (d) – CBI/AGL as per Schedule 8 of Agreement	NC-2 Open	Construction Environment Management Plan sent to DP&I electronically on 23 July 2012 with hard copies sent via mail with letter dated 31 July 2012 Emails to Port Stephens Council dated 8 August 2012. CEMP sent to PSC 24 July 2012, to NOW 24 July 2012. 22/08/2012: Approval received from DP&I confirming conditions B56 and B57 have been satisfied for Stage 1 (CBI). a) Section 2.7 Project Schedule b) Section 5.4 Monitoring and Review c) Section 5.4 Monitoring and Review and Section 5.5 Incident Management d) Section 3: Legislative and Other Requirements e) Section 5.2.1: Consultation for CEMP f) Section 4.4: Roles and Responsibilities g) Section 5.4 Monitoring and Review and Section 5.5 Incident Management h) The CEMP and associated sub plans, environmental work method statements i) Section 5.2.3 Consultation with Stakeholders and Community Engagement Plan j) Section 4.3.4 EWMS and Appendix A8: EWMS Matrix

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
	(f) a description of the roles and responsibilities for all relevant employees involved in the construction of the project including relevant training and induction provisions for ensuring that all employees, contractors and sub-contractors are aware of their environmental and compliance obligations under these conditions of approval; (g) details of how the environmental performance of construction would be monitored, and what actions would be taken to address identified potential adverse environmental impacts; (h) specific consideration of relevant measures to address any requirements identified in the documents referred to under condition A1 of this approval; (i) a complaints handling procedure during construction as identified in conditions B51 to B53; and (j) a matrix of construction work method statements (or similar) to be prepared and the anticipated level of risk associated with each to be determined. The Construction Environmental Management Plan shall be submitted for the approval of the Director-General no later than one month prior to the commencement of relevant construction works associated with the project, or within such lesser period otherwise agreed by the Director- General. Construction works shall not commence until written approval of the CEMP has been received from the Director-General.				Stage 2 CEMP for Main Power Supply (PowerServe) and Tomago to Hexham Pipeline (Lucas Engineering) accepted by DP&I in correspondence dated 21/11/2013. Downer EDI adopted PowerServe CEMP and associated plans for Electrical Connection works. Correspondence from DP&I accepting Lucas Engineering Low Pressure Pipeline works received. NC-2 CEMP for Downer EDI works at JRS to be submitted.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
B57a	As part of the Construction Environmental Management Plan required under condition B56 of this approval, the Proponent shall prepare and implement the following: (a) a Flora and Fauna Management Plan, prepared in consultation with the relevant Council and with reference to the OEH requirements, to outline measures to protect and minimise loss of native vegetation and native fauna habitat as a result of construction of the project. The Plan shall include, but not necessarily be limited to: (i) plans showing terrestrial vegetation communities; important flora and fauna habitat areas; locations where EECs, native grasses are to be cleared. The plans shall also identify vegetation adjoining the site where this contains important habitat areas and/or threatened species, populations or ecological communities; (ii) methods to manage impacts on flora and fauna species and their habitat which may be directly or indirectly affected by the project, such as location of fencing, procedures for vegetation clearing or soil removal/stockpiling and procedures for locating hollows or installing nesting boxes and managing weeds; (iii) procedures to accurately determine the total area, type and condition of vegetation community to be cleared; and (iv) a procedure to review management methods where they are found to be inadequate.	Pre-construction	CBI	Compliance Closed – CBI	Flora and Fauna Management Sub Plan a) Email date 8 August 2012 to Port Stephens Council re Fauna Hollow Management. Meeting 2 August discussing all environmental commitments. Email 31 July 2012 with FFMSP attached to PSC. Offset strategy also sent through to PSC i. Figure 1 includes ecological communities, Figure 2 species locations for project area and surrounds ii. Section 3.2, Section 4.1 Appendix B iii. Section 2.0 iv. CEMP Section 4.0

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
B57b	(b) a Cultural Heritage Management Plan, developed in consultation with registered local Aboriginal stakeholders, to outline mitigation and management strategies for items of heritage significance that may be uncovered during construction of the project;	Pre-construction	CBI PowerServe Downer EDI Lucas Engineering	Compliance Closed	CBI Cultural Heritage Management Sub Plan Correspondence received from Nur Run Gee 12 September 2011 confirming review of draft report with no comments Correspondence received form Mur-Roo-Ma 8 September 2011 acknowledging review of draft report. Correspondence received form ATOAC (Awabakal) 20 September 2011 acknowledging receipt of draft report. Recommended that groups attained site when current dense vegetation layer removed as well as a few minor edits which are now included in plan. CHMSP includes protocol to be followed during clearing and also if unexpected find encountered after clearing works. Sub plans developed by Lucas Engineering and PowerServe based on the CBI Plan.
B57c	(c) a Groundwater Management Plan prepared in consultation with NOW and HWC to detail how impacts to groundwater will be avoided and mitigated during the construction and operation of the project. The Plan shall integrate data from groundwater monitoring undertaken as required by condition B25 to set baseline and to establish targets and thresholds for the duration of the project. A contingency plan shall be developed as part of the Groundwater Management Plan in the event that groundwater is compromised during construction, such as through drawdown from horizontal directional drilling;	Pre-construction	CBI	Compliance Closed	Groundwater Management Sub Plan – sent in email to DP&I dated 11 July 2012. Approved 22/08/2013 Email from HWC 31 October 2011 indicating satisfaction with plan. Email to DP&I 9 August 2012 with correspondence attached endorsing GMSP from NOW Refer Condition B25 Sub plans developed by Lucas Engineering and PowerServe based on the CBI Plan.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
B57d	(d) a Surface Water Management Plan prepared in consultation with NOW, HWC and the Port Stephens Council (particularly in regard to stormwater being conveyed from the gas storage facility site to Old Punt Road), to detail how surface water and stormwater will be managed on the site during construction and operation of the project. The plan shall include detailed design of all watercourse crossings, culverts and in-stream works, a programme to monitor and manage, and notification and mitigation of identified impacts of watercourse crossings, culverts and in-stream crossings. In particular, the design for the horizontal directional drilling under the Hunter River shall be provided, including an assessment of the depth of scour for the Hunter River, and demonstration that the HDD will be undertaken below this depth. The plan shall also include use of appropriately sized stormwater controls, in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004). The plan shall include specific measures to avoid sediment-laden stormwater from entering the Hunter River, a monitoring programme for stormwater leaving the site (including the requirements for inspection reports required under condition B26) details of how hydrostatic test water would be disposed, and measures to mitigate contamination of soils and water	Pre-construction Construction	CBI Other	Compliance Closed	Surface Water Management Sub Plan – sent in email to DP&I dated 11 July 2012. Approved 22/08/2013. Email from HWC 31 October 2011 indicating satisfaction with plan. Email to DP&I 9 August 2012 with correspondence attached endorsing GMSP from NOW Sub plans developed by Lucas Engineering and PowerServe. HDD below Hunter River to prevent exposure from scouring and to prevent frac outs. Separate Hydrostatic Test Plan developed in liaison with NOW, HWC & PSC.

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
B57e	(e) a Flood Emergency Response Plan prepared in consultation with and to meet the reasonable requirements of Newcastle City Council and Port Stephens Shire Council;	Pre-construction	CBI	Compliance Closed – CBI	Flood Emergency Response Management Sub Plan sent to DP&I 24 July 2012. Approved 22/08/2012 Correspondence with PSC dated 26 July 2012, Email indicating plan sent through 27 July 2012. Email dated 16 August 2012 chasing up comments
B57f	(f) a Noise Management Plan to manage noise impacts during construction and to identify all feasible and reasonable noise mitigation measures. The Plan shall include, but not necessarily be limited to: (i) details of construction activities and an indicative schedule for construction works; (ii) identification of construction activities that have the potential to generate noise impacts on surrounding land uses, particularly residential areas; (iii) details of the requirements for Noise Impact Statement(s) for discrete work areas, including construction site compounds; (iv) identify all sensitive receivers where construction noise goals are predicted to be exceeded; (v) detail what reasonable and feasible actions and measures would be implemented to minimise noise impacts; (vi) consultation with the owner/occupiers of sensitive receivers (including receivers R4 (Tomago Village Caravan Park) and R5 (217 Maitland Road), where construction noise goals are expected to be exceeded, with the aim of identifying and implementing reasonable and feasible noise mitigation and management measures, including where necessary, the consideration of respite	Pre-construction	CBI (i-iv)& AGL (v) & (vi)	Compliance Closed – CBI Closed – PowerServe /Downer Closed - Lucas	Noise and Vibration Management Sub Plan approved 22/08/2012. i. Table 2-3 – Schedule currently aligns with actual works ii. Section 2.0, Table 2-6 lists main construction activities and predicted noise levels at various distances from site. iii. Section 2, Table 2-6. As no activities are predicted to impact the sensitive receptors the requirements for Noise Impact Statements is not considered necessary for the Project. Spot checks will be conducted during construction to confirm predicted levels. iv. Section 2.0, Table 2-1. No sensitive receivers are predicted to be impacted by the Project v. Appendix B – all tables vi. Section 3.0, Appendix B. R4 and R5 are not affected by the current stage of works. vii. Appendix B Table 8-1 viii. Appendix B – Table 8-2. Additional procedures developed post approval describing out of hours protocol. Out of Hours Procedure and associated sub plan to

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
	periods and alternative accommodation arrangements; (vii) procedures for notifying sensitive receivers of construction activities that are likely to affect their noise amenity, as well as procedures for dealing with and responding to noise complaints; (viii) an out-of-hours work (OOHW) protocol for the assessment, management and approval of works outside of standard construction hours as defined under this approval, including a risk assessment process under which the Environmental Representative may approve out-of-hour construction activities deemed to be of low environmental risk and refer high risk works for the Director-General's approval. The OOHW protocol shall detail standard assessment, mitigation and notification requirements for high and low risk out-of-hour works, and detail a standard protocol for referring applications to the Director-General; and (ix) a description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating how often this monitoring would be conducted, the locations where monitoring would take place, how the results of this monitoring would be recorded and reported; and, if any exceedance is detected, how any non-compliance would be rectified;				the NVMSP forwarded to DP&I 8 April 2013.. Variation to EPL submitted to EPA with approval obtained 04/03/2013. ix. Noise monitoring frequency, locations and results recording and reporting included in Section 5.2 of the CBI NMSP. Management of any exceedances are discussed in Section 5.4. Baseline measurements taken at nearest receptor (Hunter Region Botanical Gardens) during period 20-27 November 2012. Spot checks completed throughout construction as detailed in plan. Lucas Engineering also complete spot checks on machinery as detailed in plan.
B57g	(g) a detailed Acid Sulphate Soil Management Plan prepared in consultation with DPI (Aquatic Habitat Protection Unit), and NOW prior to any construction activity in areas mapped as Potential Acid Sulphate Soils or Actual Acid Sulphate Soils. The plan shall include reference to the water quality monitoring programme contained in the Groundwater and Surface Water	Pre-construction	AGL CBI PowerServe Lucas Engineering	Compliance Closed	Received confirmation email from Scott Carter (Senior Conservation Manager - Central Region, Aquatic Habitat Protection Unit, NSW DPI) on 28-Mar-12 accepting adequacy of ASS Management Plan Email with ASSMSP attached sent to DPI 22 March 2012, response received form DPI 28 March 2012

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
	Management Plans. The plan shall be prepared in accordance with the Acid Sulphate Soils Manual (ASSMC, 1998). As part of the plan, a Contingency Plan to deal with the unexpected discovery of actual or potential acid sulphate soils shall be prepared in consultation with NOW;				CBI ASSMSP Table 5-2 refers to additional monitoring GW and SW. Contingency states to stockpile material separately and advice sought. ASSMSP activated during works by CBI on Old Punt Rd with assessment of implementation included in 3rd quarter ER audit. Lucas Engineering completed soil tests during trenching along Old Punt Rd, PowerServe tested soil during excavations in Ausgrid easement.
B57h	h) a Traffic Management Plan to manage traffic conflicts that may be generated during construction. The Plan shall address the requirements of the relevant road authority and shall include, but not necessarily be limited to: (i) details of how construction of the project will be managed in proximity to local and regional roads; (ii) details of traffic routes for heavy vehicles, including any necessary route or timing restriction for oversized loads; (iii) measures to minimise and manage traffic noise; (iv) an assessment of sufficient access for emergency vehicles to ensure the proposed traffic arrangements meet the requirements detailed in Guidelines for Emergency Vehicle Access Policy No 4 (NSW Fire Brigades, 2010); (v) demonstration that all statutory responsibilities with regard to road traffic impacts have been complied with; (vi) details of measures to minimise interactions between the project and other users of the roads such as the use of fencing, lights, barriers, traffic diversions etc.;	Pre-construction	CBI	Compliance Closed – CBI	Traffic Management Sub Plan approved by DP&I 22/08/2012 i. Section 2.8 ii. Appendix A iii. Table 9-4 iv. Appendix C Table 9-3 v. Section 1.6, Section 2.0 vi. Appendix B vii. Section 3.0 viii. Appendix C Table 9-2 ix. Appendix C Table 9-2 x. Section 3.2

Item	Assessment Requirement	Stage/ timing	Responsibility	Compliance Status	Reference/ Comment
	(vii) procedures for informing the public where any road access will be restricted as a result of the project; (viii) procedures to manage construction traffic to ensure the safety of livestock and to minimise disruption to livestock; (ix) speed limits to be observed along routes to and from the site and within the site; and (x) details of the expected behavioural requirements for vehicle drivers travelling to and from the site and within the site.				

Table A1.2 Compliance Assessment – Statement of Commitments

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
7.1 Soils					
7.1.1 Soil Contamination					
1	Include a spill response plan in the emergency response plan and ensure that there is adequate spill response equipment stored onsite. Personnel will be trained on the emergency response plan and correct use of the spill response equipment.	Preconstruction	All subcontractors	Compliance Open	Refer Appendix C of the Pollution Incident Response Management Plan All vehicles to carry spill kits with spot checks completed by CBI staff and ER during site inspections. Spill response training included in Tool box talks for all contractors Spill response included in various plans – refer to audits of plans for details
2	Ensure concrete mixers and pump trucks are not washed on-site.	Construction	All subcontractors	NC-1 Open	Modification of Minister's Approval MP10_0133 issued 5 February 2013 allowing washout outside of bunded hardstand areas until concrete hardstand areas are installed on the site. Site inspections note the liner has been torn and requires replacement regularly.
3	Store PASS capable of producing leachate within lined bunds.	Construction	All subcontractors	Compliance Open	ASSMP – refer Table 4-1 SMSP – refer Table 8-6 and Table 8-8 PASS encountered on Old Punt Rd previous reporting periods– treated in place with lime and restored in excavation. Excess material stored in lined bund area near entrance to site and disposed as solid waste.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
					Treated PASS stored in plastic lined bunded area. Material classifies as solid waste and removed off site. Area decommissioned. Lucas and PowerServe confirmed excavations did not encounter ASS/PASS
4	Contain excess construction materials, drill fluids and cuttings using appropriate methods such as plastic-lined pits, skips or holding tanks for appropriate reuse or off-site disposal. HDD fluids will be contained within the bunded HDD work area.	Construction – Stage 2	Lucas Engineering	Compliance Closed	HDD exit and entry points bunded with sediment and erosion controls; use of skips or holding tanks for pumped material. Excess muddy water in bunded area at rear of Hexham Site. Excess material mixed with mulch for disposal offsite. HDD works now completed with pads now rehabilitated.
5	Provide workforce inductions and training to ensure personnel have knowledge of the correct use of refuelling systems and chemical handling procedures.	Construction	All subcontractors	Compliance Open	Refer to SMSP Refuelling included in inductions. All refuelling done on site using mobile refuelling trucks. SWMS for refuelling checked. Site inspections indicate any pumps containing fuel contained within impervious container.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
6	Restrict vehicle movements to sealed or dedicated areas and roadways, as far as practical.	Construction	All subcontractors	Compliance Open	SMSP Site boundaries delineated initially with parawebbing. Road construction for main access road, gas track road completed. Permanent rural fencing installed and webbing removed. Movements are along Main Access Road or Gas Pipeline Track. Movements on PPA also confined to delineated areas.
7	Ensure drainage around vehicle and equipment servicing areas, workshops and chemical storage areas is directed to sumps.	Construction	All subcontractors	Compliance Open	SMSP No vehicle and equipment servicing areas, workshops and major chemical storage areas currently on site. Minor quantities stored in self bunded shipping containers.
8	Use licensed contractors to collect, transport and dispose of hazardous materials such as waste solvents, paints, mercury absorption medium and hydrocarbons to a licensed off-site facility in accordance with EPA guidelines.	Construction	All subcontractors	Compliance Open	WMSP DG&HMMSP Regulated wastes tracked by CB&I with certificates issued – includes licence number of contractor. No other regulated waste removed off site.
9	Remove wastewater and sewage from site by an EPA licensed operator for treatment at an EPA-approved wastewater treatment facility.	Construction	All subcontractors	Compliance Open	WMSP. Amenities wastewater transported offsite with service dockets left at site office or included on invoices. Verbal confirmation received that disposal location is appropriately licenced Written confirmation of disposal location from transporter obtained. Checks completed and EPLs obtained for wastewater removal. Oily water removed by AES Pty Ltd and disposed to Environmental Treatment Solutions Pty Ltd

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
10	Regularly inspect hazardous material containment facilities to ensure their integrity.	Construction	All subcontractors	Compliance Open	SMSP DG&HMMSP Checks completed and recorded by CB&I on the daily and weekly site inspection checklists. Daily checks completed by Lucas and Downer EDI
11	Ensure potential contaminants at the Hexham receiving station are stored within flood-protected facilities.	Construction – Stage 2	Lucas Engineering Downer EDI	Compliance Open	Stage 2 CEMP – SMSP At Hexham, Bentonite was stored on pallets over hard surface under building. All potential contaminants now removed.
12	Perform an assessment (in accordance with the SEPP 55 and NEPM 1999) to confirm the contaminant type, concentrations and extent of contamination in the event of unearthing historically contaminated soil. Action will then be undertaken in accordance with relevant EPA requirements and land use criteria to either remediate the impacted area or remove the contaminants.	Preconstruction	CBI	Compliance Open	SMSP – Table 5-2 and Table 4-1 AGL to pay for any costs associated with contamination (if found) - CBI must have appropriate management processes in place. Two finds of asbestos during bulk earthworks – removed by licensed contractor. No other contamination issues to date. Asbestos included in CBI materials tracking register.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
13	Investigate the current status of the existing sewage management system at the western boundary of the Hexham receiving station site.	Preconstruction – Stage 2	Lucas Engineering	Compliance Open	Lucas Engineering investigating – will determine final design of system for operations.
14	Include inductions to construction personnel that outline measures on how to deal with suspected contaminated soil.	Construction	All subcontractors	Compliance Open	SMSP Unexpected find procedure developed which includes contaminated soil. Unexpected soil contamination management included in induction
7.1.2 Soil Erosion					
15	A construction surface water management plan that describes erosion and sediment control will be prepared in accordance with NSW DECC Managing Urban Stormwater: Soils and Construction – Volume 2A Installation of Services 2008 (DECC, 2008) and Managing Urban Stormwater: Soils and Construction (The Blue Book) (Landcom, 2004). All erosion control and drainage works will be designed in accordance with Urban and Sediment Control Guidelines (DLWC, 1992).	Preconstruction	AGL	Compliance Open	SWMSP developed in accordance with guidance documents. Controls and guidance on installation included in Appendix C of plan. Installation of controls as per guidance documents including drains along cuts on Main Access Road. Main Access Road handed back to AGL.
7.1.3 Acid Sulfate Soils					
16	Conduct a detailed ASS assessment at the Hexham receiving station site prior to construction at this site to determine the natural buffering capacity of the soil and ascertain that site works meet the requirements of clause 25 of the Newcastle Local Environmental Plan 2003 (Newcastle LEP 2003).	Preconstruction – Stage 2	Lucas Engineering	Compliance Closed	ASS assessment completed – area low risk

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
17	Minimise disturbance and exposure of ASS.	Preconstruction	CBI Lucas Engineering PowerServe	Compliance Open	ASSMSP AGL studies to date indicate probability is low of encountering ASS in areas of primary excavation (Old Punt Rd). Site is low risk with exception of some areas of Old Punt Rd. Excavations completed with some ASS encountered and treated. Trenching works were completed each evening with material reinstated. Excess material was treated and stored in designated area prior to assessment and final disposal as solid waste. No further ASS/PASS encountered
18	Store excavated ASS in conditions that simulate its natural state, or treat and store away from waterbodies and drainage lines.	Preconstruction	CBI Lucas Engineering PowerServe	Compliance Open	ASSMSP PASS reinstated at end of each day or treated and stored in designated area. Designated area near entrance to site away from drainage lines and water bodies. Now decommissioned as no longer required.
19	Treat excavated ASS using agricultural lime with machinery sufficient to perform adequate mixing, where practicable.	Preconstruction	CBI Lucas Engineering PowerServe	Compliance Open	ASSMSP No ASS material identified.
20	Bund areas where ASS are exposed, including at the HDD entry and exit points for the pipeline beneath the Hunter River, to prevent leachate entering the wider environment.	Preconstruction	All subcontractors	Compliance Open	ASSMSP – Table 4-1 No ASS material identified.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
21	Undertake any potential ASS remediation works in accordance with clause 25 of the Newcastle LEP 2003, and the Acid Sulfate Soils Manual (ASSMAC, 1998).	Preconstruction	All subcontractors	Compliance Open	ASSMSP ASSMSP and SWMS developed in accordance with clause 25 of the Newcastle LEP 2003.
22	Undertake any potential ASS remediation works in accordance with, the Port Stephens Council Local Environmental Plan 2003, the Port Stephens Council Acid Sulfate Soils Policy, 2004 and the Acid Sulfate Soils Manual (ASSMAC, 1998).	Preconstruction	All subcontractors	Compliance Open	ASSMSP No ASS material identified.
7.1.4 Monitoring					
23	Inspecting and monitoring hazardous material containment facilities to ensure their integrity.	Preconstruction	All subcontractors	Compliance Open	DG&HMMSP SMSP Checks completed and recorded
24	Inspecting and maintaining erosion and sedimentation control structures.	Preconstruction	All subcontractors	Compliance Open	SMSP Daily and weekly checklists and summary reports
25	Inspecting and monitoring of all works to ensure soil erosion or contamination is not occurring.	Preconstruction	All subcontractors	Compliance Open	SMSP Daily and weekly checklists and summary reports

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
26	Monitoring soil quality around Project works prior to and during construction to ascertain the presence of contaminated soil or ASS.	Preconstruction	All subcontractors	NA Open	ASSMSP Sampling completed 28 February 2013 by Douglas Partners to characterise soil along Punt Rd prior to excavations. Douglas Partners also tested materials along southern portion of Old Punt Rd where ASS risk profile was high during works. Material tested as clear of PASS/ASS with no further testing required. Material was treated with lime regardless if removed to storage area. Visual examinations included in checklist. Soil sample collected by JBS&G from trench along Gas Access Track, field test indicated PASS. Sample sent for analysis. Trench excavated and backfilled on same day. PowerServe field tested soil for ASS/PASS during excavations in Ausgrid easement – nil encountered
7.1.5 Modifications to Management and Mitigation Measures for Soils					
27	Conduct an ASS assessment of the Hexham Receiving Station site prior to construction at the site to check the natural buffering capacity of the soil and to satisfy the requirements under clause 25 of the Newcastle Local Environmental Plan 2003.	Preconstruction – Stage 2	AGL Lucas Engineering	Compliance Completed	Duplication with SoC 16

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
28	A hazardous material survey is carried out prior to demolition of the existing building at the Hexham receiving station site.	Preconstruction – Stage 2	AGL Lucas Engineering	NA Open	Lucas Engineering to complete survey - pending
29	A CEMP is prepared that includes procedures for the management and disposal of fill material, procedures for unexpected finds and an ASS management plan, if required.	Preconstruction	AGL	Compliance Closed	SMSP ASSMSP Unexpected finds procedure developed which includes contaminated soil and ASS etc.
30	Ensure that the banks of watercourses are not disturbed during construction.	Preconstruction	AGL	NA Open	Included in Table 4-1 of CBI ASSMSP Works within one water course on Old Punt Rd. Some disturbance in existing disturbed area (culverts). Further stabilisation using sandbags as per SoC 59. Horizontal Directional Drilling used under Hunter River and Old Punt Rd.
7.2 Surface Water					
31	A construction surface water management plan (SWMSP) is being prepared and implemented prior to construction commencing on site. The SWMSP will be prepared in consultation with HWC, NOW, OEH and PSC. The plan will describe best practice surface water control measures to reduce the risk of contamination of surface water and shallow groundwater, or the alteration of surface water flows. The plan will be supported by a surface water monitoring network as described in section 9.2.3 of the EA Main Report.	Preconstruction	AGL	Compliance Closed	Surface Water Management Sub Plan – sent in email to DP&I dated 11 July 2012 Email from HWC 31 October 2011 indicating satisfaction with plan. Email to DP&I 9 August 2012 with correspondence attached endorsing GMSP from NOW Additional SWMSP developed for pipeline works and electrical connection.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
32	The surface water management plan will be prepared and implemented as part of the CEMP and OEMP.	Preconstruction	All subcontractors	Compliance Open	SWMSP Implementation checked during site inspections – internal and external as well as ER quarterly audits Refer individual reports and audit reports for implementation.
Water Supply and Disposal					
33	Minimise water use.	Construction	All subcontractors	Compliance Open	SWMSP Refer also SoC91 Bulk of water use for dust suppression. Where possible, water from dewatering operations is used for dust suppression. Dust suppression water will be sourced from stormwater pond once installed. Toilets have half flush, taps in toilets have timer cut offs installed.
34	Source water from existing water supply infrastructure. Until the permanent water supply is available, it is currently proposed that this will be supplied to construction sites by either water tankers or from a standpipe such as a HWC metered standpipe along Old Punt Road.	Construction	All subcontractors	Compliance Closed	SWMSP Water supplied to site via from HWC metered standpipe near main entrance – pipeline installed.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
35	Develop hydrostatic test management measures in consultation with HWC, OEH and NOW. The management measures will address: • Hydrostatic test water supply. This is likely to be potable water from existing HWC water supply infrastructure, untreated water from HWC Station 20 bores, groundwater locally abstracted from new bores or a combination of these; • Assessment of potential changes to groundwater levels if groundwater is abstracted from existing HWC and new AGL bores	Construction	AGL CBI Lucas Engineering	Compliance Closed	SWMSP. Water for hydrostatic testing potable water – added to latest version of plan. Original plan developed in consultation with NOW and HWC. NOW and HWC consulted for the hydrostatic test management measures proposed in the SWMSP.
36	Transport amenities wastewater offsite by a licensed operator to a licensed disposal facility.	Construction	All subcontractors	Compliance Open	WMSP, SWMSP, GWMSP Amenities wastewater transported off site with service dockets are left at site office or attached to invoices. Written confirmation of disposal location from transporter obtained.
37	Test and treat water generated by dewatering of trenches or excavations if required, and infiltrate back into the groundwater table at designated infiltration areas, or alternatively transport offsite to a licensed disposal facility.	Construction	All subcontractors	Compliance Open	SWMSP SWMSP– water to be infiltrated back into groundwater table if clean enough to do so. If water is suspected of being contaminated it will be tested and disposed of or used accordingly. Dewatering by Daracon of sumps to groundwater – pH, EC, NTU, DO and TDS sampled daily. 170596-EN-P22-Holding Pond Discharge Procedure completed and implemented 8 August 2013 to clarify monitoring requirements for CBI.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
Surface Water Flow and Flooding					
38	Divert runoff from outside the work area to existing drainage lines to prevent the formation of new surface flow paths.	Construction	All subcontractors	Compliance Open	SWMSP Installation of diversion drains completed along eastern portion of Main Access Road. This water is diverted to culverts located on site.
39	Install culverts under new roads to maintain existing surface drainage flows.	Construction	All subcontractors	Compliance Completed	SWMSP Construction of culverts along Main Access Road completed – road works completed.
40	Restrict vehicle movements to formed access roads and sealed roads to avoid surface compaction where practicable.	Construction	All subcontractors	Compliance Open	SWMSP Movements are along Main Access Road or Gas Pipeline Track. Movements on PPA also confined to delineated areas.
41	Monitor the potential for flooding by observing weather reports and river levels during potential flood events.	Construction	All subcontractors	Compliance Open	SWMSP Adverse weather forecasts are discussed in pre start meetings (prestart records) with weather reports posted on meeting room wall or notice boards where relevant. No potential for PPA site flooding during audit period. Minor flooding at Hexham site.
42	Store equipment securely when not in use to prevent it being washed away in a flood.	Construction	All subcontractors	Compliance Open	SWMSP Site inspections indicate tools and other equipment is packed into storage containers –theft prevention additional driver

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
					Sites noted to be neat and tidy during site inspections.
43	Avoid unnecessary clearing of vegetation and excavation works.	Construction	CBI Lucas Engineering	Compliance Open	CBI SWMSP – Table 8-1 Vegetation cleared along delineated boundaries. Trees along boundary line retained as noted in ER site inspection reports.
44	The gas storage facility will have a minimum floor level equivalent to the 100-year ARI flood level (approximately 4.6 m AHD) plus a freeboard of 0.5 m (i.e., at least 5.1 m AHD). The preliminary design for the facility has a finished floor level of 6.3 m AHD.	Construction	AGL	Compliance Open	SWMSP – Table 8-1 Main pad area average level at 6.3m AHD. Bunded area average level at 4.65m AHD. Design is compliant with this condition – construction currently underway with further confirmation of compliance once earthworks completed.
45	The design of the Hexham receiving station has a minimum floor level equivalent to the 100-year ARI flood level (approximately 3.9 m AHD) plus a freeboard of 0.5 m (i.e., at least 4.4 m AHD). No additions to the existing building are currently proposed.	Construction – Stage 2	AGL Lucas Engineering Downer EDI	NA Open	To be confirmed constructed as per design after construction completed

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
Runoff, Erosion and Sediment Control					
46	Restrict construction traffic movement to formed access tracks to avoid excess disturbance to soil and creation of bare areas where practicable.	Construction	All subcontractors	Compliance Open	SWMSP SMSP Vehicles noted during ER site inspections using formed access roads and temporary construction access during site inspections
47	Select construction equipment to minimise the disturbance to soils.	Construction	All subcontractors	Compliance Open	SWMSP Majority of machines have rubber tyres with track vehicles only used when works require.
48	Minimise duration of subsoil (including stockpiles) exposure to weather.	Construction	All subcontractors	Compliance Open	SMSP Subsoil stockpile consisting of unsuitable material used to form bund wall in primary project area. Topsoil stockpiles seeded until required during rehabilitation works. Subsoil emplaced in final locations as soon as practicable.
49	Secure disturbed bare soils by re-spreading topsoil, re-vegetating or applying a geo-fabric (or similar), as soon as practicable after reinstatement of earthworks.	Construction	All subcontractors	Compliance Open	SMSP Works still progressing for low pressure pipeline in TAC easement, primary project area, electrical connection and Jemena receiving station in Hexham. Reinstatement works completed all other areas with exception of southern side of Main Access Rd – Lucas to complete.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
50	Re-vegetate exposed soils as soon as possible to reduce potential for sediment-laden runoff.	Construction	All subcontractors	Compliance Open	VRWMP SMSP Rehabilitation works completed along northern side of Main Access track. Gas Access Track completed, HDD pads reinstated. Old Punt Rd stabilised from CBI and Lucas Engineering works. All other areas remain active.
51	Provide wind-breaks (or equivalent control measures) around exposed areas and stockpiles to prevent wind erosion.	Construction	All subcontractors	NA Open	SMSP Not applicable as material is sandy with minimal dust noted coming off stockpiles during site inspections – includes windy days
52	Place soil stockpiles upslope of excavations and not in drainage lines.	Construction	All subcontractors	Compliance Open	SMSP Noted during site inspections topsoil stockpiles located along pipeline easement away from drainage lines. Excavations primarily in Primary Project Area which is relatively flat. Material excavated during low pressure pipeline works separated either side of pipeline – area relatively flat and material reinstated within 48 hours. No material noted in drainage lines during audit period.
53	Construct roadside swales to capture runoff from the Primary Project Area access roads during construction.	Construction	CBI	Compliance Open	SMSP SWMSP Road side swales installed with rock checks to prevent erosion.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
54	Design drains to minimise water velocities.	Construction	All subcontractors	Compliance Open	SWMSP SMSP Drains relatively flat with rock checks installed where necessary to slow flow.
55	Install velocity reduction devices, such as sandbags, in drains and sloped drains to reduce erosion.	Construction	All subcontractors	Compliance Open	SWMSP SMSP Sandbags and rock checks installed along Main Access Road where required – to be reinstated after recent works to install low pressure pipeline.
56	Install sediment capture devices, such as silt fences and bunding, down-slope of exposed soils and soil stockpiles.	Construction	All subcontractors	Compliance Open	SWMSP SMSP Silt fences installed along site boundaries and downslope of active areas where required.
57	Construct suitably lined sediment control ponds down-slope of construction work areas upfront. These will subsequently be developed into permanent wetlands during the operations stage.	Construction	CBI	Compliance Open	SWMSP - Table 8-4 GWMSP – Table 8-1 Sediment control pond installed in Primary Project Area. Water tested prior to discharge.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
58	Treat construction tracks to minimise surface degradation, e.g., compaction or topping with gravel.	Construction	All subcontractors	Compliance Open	SWMSP SMSP Gas Pipeline Track sealed with crushed gravel material. Main Access Road sealed with bitumen.
59	Stabilise the banks of any disturbed watercourses adjacent to Old Punt Road using measures such as rock rip-rap, diversion berms, sediment fences, jute matting and reseeding.	Construction	CBI	Compliance Open	SMSP - Appendix C Section 4.2 Works adjacent to Old Punt Rd completed. Sediment controls now removed and area stabilised through natural revegetation.
60	Divert runoff upstream of disturbed areas to existing drainage lines to prevent the risk of increasing erosion and requiring further sediment control measures.	Construction	All subcontractors	Compliance Open	SWMSP SMSP Diversion drains installed as per SMSP with exception of car park area along western boundary. Sandbags installed instead and rock placed in area to prevent erosion.
61	Undertake daily inspections of all runoff, erosion and sediment control structures during the construction period.	Construction	All subcontractors	Compliance Open	SMSP SWMSP. Checks completed daily (split into work areas with all areas covered over the week). All areas inspected after rainfall events.
62	Maintain runoff, erosion and sediment control structures according to appropriate standards.	Construction	All subcontractors	Compliance Open	SMSP CB&I Checklists reports on effectiveness if controls Site inspections indicate maintenance works are on-going.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
63	Ensure silt fences are in a vertical position and securely fixed and remove sediment or residue behind sediment control barriers.	Construction	All subcontractors	Compliance Open	SWMSP Checks for erosion completed and recorded.
64	Monitor earthwork areas regularly for signs of erosion.	Construction	All subcontractors	Compliance Open	SWMSP SMSP includes general requirement to check all strictures during all works Checks for erosion completed and recorded
65	Install and commission at the operations phase, runoff, erosion and sediment control measures as soon as practical.	Operations	AGL	NA Open	To be include in OEMP to be developed for operations phase.
Discharge of Contaminated Water, Spills and Leaks					
66	Minimise the volume of hazardous chemicals stored on site.	Construction	All subcontractors	Compliance Open	SWMSP DG&HMMSP Minor volumes of chemicals stored on PPA site in self bunded shipping containers – primarily cleaning fluids, minor quantities of fuel, oils and lubricants. Hexham site has only small cans of fuel stored.
67	Store and transport hazardous materials according to their material safety data sheet (MSDS).	Construction	All subcontractors	Compliance Open	SWMSP – Table 8-11 DG&HMMSP – Table 8-2 Segregation charts posted in CBI DG areas. Training on segregation distances to relevant staff through toolboxes completed.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
68	Store potentially contaminating chemicals according to the appropriate standards, including measures such as impervious bunded areas capable of capturing 110% of the maximum spill volume.	Construction	All subcontractors	Compliance Open	SWMSP DG&HMMSP Site inspections indicate material mostly stored correctly – some non-conformances noted and rectified - refer to individual site inspection reports.
69	Prepare a spill response plan and ensure adequate spill kits are available at all construction sites and personnel are trained in their use.	Construction	All subcontractors	Compliance Open	SWMSP DG&HMMSP Spill kit located at site offices and in PPA area. Small spill kits are required by the site to be carried by all vehicles on PPA site. Random checks during site inspections by CBI staff and ER confirm compliance with site requirement. Toolbox talks detailing spill response completed
70	Maintain all construction equipment appropriately and inspect machinery for leaks.	Construction	All subcontractors	Compliance Open	SWMSP All machinery checked daily and documented Inspections completed routinely
71	Bund HDD entry points to prevent the release of leachate from drill cuttings, drilling fluids, or spills entering the surrounding environment, including the Hunter River.	Construction – Stage 2	Lucas Engineering	Compliance Closed	Stage 2 CEMP – SWMSP Frac out near HDD exit point along Old Punt Road near Kennington Drive. Spill of mud along easement and onto Old Punt Road. HDD works now completed.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
72	Implement hydrostatic test water management measures in consultation with HWC and NOW to determine and address requirements for testing and treating of this hydrostatic test water prior to re-use or disposal. Disposal options include infiltration to groundwater or discharge to an existing watercourse.	Construction	CBI Lucas Engineering	Compliance Open	SWMSP – Section 2.4. AGL completed development hydrostatic testing strategy and plan. Duplicates SoC 35 Audits against plans indicate compliance.
Frac-out					
73	A detailed geotechnical investigation will be undertaken prior to HDD under the Hunter River. This will include drilling investigation bore holes and shallow seismic surveys to provide detailed understanding of the geological strata under and adjacent to the river.	Preconstruction – Stage 2	Lucas Engineering	Compliance Closed	AGL have completed geotechnical investigations prior to commencing works. This data has been used in planning construction works including frac-out mitigation measures as outlined in NGSF-LUC-HPW-PM-PLN-0010 Drilling Fluid Management Plan
7.2.2 Monitoring					
74	A surface water quality monitoring program will be developed as part of the CEMP and OEMP surface water management plan and in consultation with relevant authorities (OEH, NOW, and HWC). It will include preconstruction ('baseline'), construction and operations monitoring of water quality parameters. Monitoring will be undertaken within the primary project area and at surface runoff control facilities (such as sediment ponds). The following monitoring locations are proposed: • Sediment ponds (during construction only). • Holding and inspection tanks. • Outflow from the holding pond. • Water Features 1 and 2.	Preconstruction	AGL	Compliance Open	SWMSP Appendix A – Figures including monitoring locations Sediment ponds in ESCP – to be updated as required Targets included in Appendix C Sediment ponds installed. JBS&G engaged to undertake weekly inspection against surface water management plan with Lucas Engineering test surface waters as required.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
	The proposed stormwater containment and treatment system will be designed to provide treatment of surface water runoff from the site through containing, treating and adequately disposing of this runoff. Maintenance and monitoring will need to be undertaken to ensure discharges satisfy regulatory requirements. Construction and operations monitoring results will be compared to target concentrations (trigger values) derived from baseline data. Where this is not possible due to insufficient data, the concentrations will be compared to recommended trigger value concentrations for protection of aquatic ecosystems (ANZECC, 2000). The plan will also require inspecting water levels in and the integrity of surface runoff control facilities (such as holding pond, bio-retention systems, drains, sumps and sediment fences) monthly and following significant rainfall.				
7.2.3 Modifications to Management and Mitigation Measures for Surface Water					
75	A surface water baseline monitoring program is carried out before construction commences.	Preconstruction	AGL	Compliance Closed	Completed – refer EA SWMSP lists base – Table line data results in Appendix C

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
76	During the construction program, holding and sediment pond areas on site will be monitored monthly following the initial 12-month construction period. It is envisaged that a report on a six-monthly basis will be produced, however final requirements will depend on the specific planning approvals (and associated reporting requirements to different agencies) for surface water and groundwater monitoring.	Construction	CBI	Compliance Open	SWMSP – Table 5.1 details monitoring program requirement Holding and sediment pond areas completed – monitoring commenced as per SWMSP.
77	AGL will appoint a peer reviewer for the engineering design of the stormwater management system.	Pre-construction	AGL	Compliance Closed	Confirmation email by Axel Hanson from Hunter Water Corporation dated 2-May-12 approving SMEC as the independent peer reviewer. Review of design completed with email received from HWC 2 May 2012 with recommendations. Meeting held with HWC 20 July 2012 to discuss review and recommendations. Submitted to DP&I on 8 June 2012
78	Stormwater from the site will be treated in accordance with PSC's 'Urban Stormwater and Rural Water Quality Management Plan for New Developments' and will therefore be of equivalent (or better) quality than stormwater from other sites within the municipality.	Construction	CBI	Compliance Open	This Mgt Plan has been referenced in design of stormwater controls on site. CEMP, EWMS, SWMSP Refer various commitments for specific controls
79	Holding pond will be sized to accommodate up to a 1 year ARI.	Construction	CBI	Compliance Closed	SWMSP – refer Figure 5 Holding pond has been sized for up to 1 year ARI 24 hour storm.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
80	Disposal of hydrostatic test water will be managed under the surface water management plan in consultation with relevant agencies.	Construction	CBI Lucas Engineering	Compliance Open	SWMSP – Section 2.4. SWMSP has been submitted to agencies for review and accepted. Separate Hydrostatic Test Plan developed and approved by agencies. Audit against plans indicate compliance.
81	AGL will prepare a stormwater management plan for the Project.	Preconstruction	CBI AGL	Compliance Closed	SWMSP completed for CBI and all Stage 2 contractors (Lucas, Downer, PowerServe).
82	A flood emergency response plan will be prepared for the Hexham receiving station.	Preconstruction – Stage 2	Lucas Engineering	Compliance Closed – Lucas Engineering	Included in Emergency Management Plan – Section 9.0
83	The surface water management plan will be prepared in consultation with HWC, OEH and NOW, and will include, but not be limited to: a) A description of the quantity and source of all surface water supplies relating to construction and operations; b) Detailed baseline data on surface water quality; c) Surface water quality impact assessment criteria and a protocol for the investigation, notification and mitigation of identified exceedances; d) A program to monitor surface water quality; e) Detailed design of all water crossings, culverts and in-stream works; f) A program to monitor and manage watercourse crossings, culverts and in stream works; g) A protocol for the investigation, notification and mitigation of identified impacts associated with watercourse crossings, culverts and in stream works.	Preconstruction	CBI	Compliance Open	SWMSP – refer CoA 57d a) Section 2.3 b) Baseline included in Section 5.2 and Appendix C c) Appendix C for assessment criteria. Table 8-15 for protocol to follow d) Monitoring program included in Section 5.1 e) Design of water crossings, culverts and in stream works included in ESCP as part of SMSP – Section 10.2 f) Program to monitor and manage watercourse crossings, culverts and in stream works added to plan g) Table 8-15 - protocol for investigation, notification and mitigation of identified impacts associated with watercourse crossings, culverts and in stream works to be included in plan

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
84	Water feature 4 is not disturbed by the access road corridor.	Preconstruction – Stage 2	CBI	Compliance Open	CEMP - SWMSP
85	When wastewater is tankered: The system will have a telemetered level sensor that alarms when over range; The tank will be included on the regular site inspection and reporting program.	Construction	CBI	Compliance Open	WMSP All toilet blocks have visible and audible alarms installed. Wastewater pit located in the Primary Project Area is alarmed (visual and audible). Increased frequency of pump outs to twice weekly. Included visual and audible alarm inspection on daily check list. Created 170596-EN-C09-Daily Amenities Leak Inspection Checklist. Amenities checked for running water daily after cleaners leave site. Pump system is isolated after hours to ensure continuous flow is prevented. Additional toilets located near the LNG Tank noted to have visible and audible alarm installed. Permanent facilities to have alarms installed – to be confirmed once installed.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
86	There is a groundwater monitoring piezometer that is regularly sampled for pathogens and nutrients, downstream of the wastewater holding tank.	Construction	CBI	Compliance Open	GMSP – Table 8.1 Groundwater bore located to north (down gradient) of sewage holding tank (MW5). Analytes to be tested include nutrients and pathogens such as E. Coli, total or faecal coliforms to indicate sewage contamination. Check to be completed on bores required for permanent facilities.
87	Ensure that the banks of watercourses are not disturbed during construction.	Construction	CBI Lucas Engineering	Compliance Open	GWMSP – Table 8-1 Works within one water course on Old Punt Rd. Some disturbance in existing disturbed area (culverts). Further stabilisation using sandbags as per SoC 59. Area now stabilised with vegetation regrowth. Sand bags removed. No other watercourses disturbed.
88	Those conditions 1 to 5 recommended by PSC are implemented for the Project. 1) Full details of stormwater drainage shall be approved by an accredited certifier or Council prior to issue of Construction Certificate. 2) Submission of Works-As-Executed plans and report prepared and certified by a suitably qualified drainage engineer confirming all drainage works (volume, discharge, levels, location etc.) are built in accordance with conditions of consent and the approved plan. The documents shall be submitted to, and accepted by the Certifying Authority prior to issue of the Occupation certificate.	Pre operations	AGL (1,3,5) CBI (2,4)	Compliance Open	1) Completed. 2) To be submitted once plant has been constructed 3) Noted –included in OEMP to be developed for operations phase. OEMP and sub plans have been drafted 4) Refer Surveyors Plan for DP1173564 – current location of buildings is on shoulder of TAC access road. Check of PSC LEP for area confirms road is not a Public Road 5) Completed

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
	3) The stormwater system, including any water quality or quantity components, shall be maintained in perpetuity for the life of the development. 4) Separate approval is required to occupy, close or partially close the road reserve adjacent to the property under the Roads Act. The storage of materials, placement of toilets and rubbish skips within the road reserve is not permitted. 5) Provide water quality report that shows that the system for removal of nutrients and other pollutants meets the targets set out in Council's 'Urban Stormwater and Rural Water Quality management Plan' (see section 8). Details to be provided to the certifying authority prior to issue of the Con Cert.				
7.3 Groundwater					
90	A groundwater management plan will be prepared in consultation with relevant agencies and implemented as part of the CEMP and OEMP. The groundwater management plan will describe best practice control measures to reduce the risk of contamination of shallow groundwater, or the substantial alteration of groundwater flows due to drawdown effects. The proposed (onsite) monitoring network will be effective in identifying any impacts during both the site construction and operation of the facility. The groundwater management plan will define the groundwater monitoring network, analytes and frequencies, include a spill response plan and a contingency plan to respond to any spills or measured groundwater contamination during Project construction	Preconstruction	CBI Lucas Engineering – Stage 2	Compliance Open	Email from HWC 31 October 2011 indicating satisfaction with plan. Email to DP&I 9 August 2012 with correspondence attached endorsing GMSP from NOW Groundwater Management Sub Plan – sent in email to DP&I dated 11 July 2012. Letter from DP&I received 10/08/2012 approving plan for primary project area. Groundwater Management Sub Plan – refer CoA B25 and B57 Contingency plan to respond to any drawdown caused by HDD based on groundwater monitoring included Lucas Engineering GMSP – Appendix B (Stage 2). No further HDD works to be completed.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
	or operations. Groundwater levels will also be monitored at a selection of sites. It will also include a contingency plan to respond to any drawdown caused by HDD based on groundwater monitoring described in section 7.4.6 of the EA Main Report.				
7.3.1 Groundwater Levels and Flow					
91	Minimise groundwater use.	Preconstruction	CBI	Compliance Open	GMSP – Table 8-1 Minor volumes of groundwater used during period from dewatering of excavations – used for dust suppression. Volume's recorded. No further use of groundwater for dust suppression planned for PPA. Groundwater pumped from pits recharged back to aquifer. Excavations along Old Punt RD – water transferred to trench.
92	Discharge excess groundwater pumped from trenches during construction where possible to minimise temporary changes in local groundwater levels.	Construction	All subcontractors	Compliance Open	GMSP Groundwater pumped from pits recharged back to aquifer or discharged to land for infiltration.
93	Replace material excavated from trenches to minimise changes to groundwater flows, as far as practical. Where possible, pipelines will be bedded on sand in the base of the trench.	Construction	All subcontractors	Compliance Open	GMSP Material excavated replaced end of each day along Old Punt Rd by CBI. Excavations on Primary Project Area generally above water table with exception of areas requiring dewatering. All pipes buried in sand (site geology exclusively consists of sand). Lucas Engineering pipeline excavations usually closed within 48 hours.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
94	Undertake infiltration rate tests at the sites of proposed infiltration basins to determine local infiltration rates and the presence of indurated sand layers capable of inhibiting groundwater recharge.	Preconstruction	CBI	Compliance Open	Included in GMSP Infiltration basins were not installed during reporting period. Water from dewatering activities directed to sediment basin location and bund area with visual monitoring completed. Infiltration tests not completed nor considered to be required.
95	Monitor groundwater levels within and at the boundaries of the gas plant site.	Preconstruction Construction	AGL	Compliance Open	GMSP – Section 5.0 Monthly groundwater monitoring completed first 24 months – now expanded to quarterly frequency.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
7.3.2 Groundwater Quality					
96	A groundwater baseline monitoring program has commenced and will continue during construction and operations. This includes measurement of groundwater levels and quality. Groundwater monitoring will be carried out throughout the life of the Project within the gas plant site. Measures for preventing contamination of surface water described in section 7.3.4 of the EA Main Report will assist in preventing the contamination of groundwater. Measures for preventing contaminated soils or ASS soils contaminating surface water are described in section 7.2.4 of the EA Main Report. These measures will prevent contamination of groundwater by negating the infiltration of contaminated surface water and the leaching of potential contaminants from the soil into the groundwater. A thorough geotechnical investigation will be completed prior to HDD commencing to ensure that it is designed to prevent groundwater contamination during construction. Water quality parameters to be monitored will be determined during development of the groundwater management plan and in consultation with HWC, OEH and NOW. A report presenting data and analysis of the six months of baseline water quality data (both groundwater and surface water) will be provided to HWC, OEH and NOW. The baseline report will review the interim thresholds and develop the final thresholds for water quality criteria for both the CEMP and OEMP.	Preconstruction Preconstruction – Stage 2	AGL	Compliance Closed	Baseline report completed and summary of results include in GWMP AGL have completed geotechnical investigations prior to commencing works. This data has been used in planning construction works including frac-out mitigation measures as outlined in NGSF-LUC-HPW-PM-PLN-0010 Drilling Fluid Management Plan

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
Spills and Leaks					
97	The measures for preventing direct contamination of surface water include measures to prevent spills at the gas plant reaching groundwater.	All stages	AGL All subcontractors	Compliance Open	SWMSP GMSP – spill response contingency plan flowchart, Appendix E Spill Response Procedure
7.3.3 Monitoring					
98	Groundwater monitoring will be undertaken in accordance with the groundwater management plan throughout the life of the Project in the PPA and during construction only at the Hexham receiving station site and adjacent to HDD entry and exit points, assuming no changes beyond expected natural variation are observed in these bores. Monitoring bores will be installed. There may be several phases of installation depending on the respective site and pipeline construction programs. A groundwater baseline will be established before construction commences (minimum six months at boundary locations). The final monitoring locations will be defined during development of the Groundwater Management Plan for the site and determined in consultation with HWC, OEH and NOW. A thorough geotechnical investigation will be completed prior to HDD commencing to ensure that it is designed to prevent groundwater contamination during construction.	Preconstruction Preconstruction – Stage 2	CBI AGL	Compliance Open	GMSP – Section 5.0 Stage 2 – HDD GMSP developed Groundwater monitoring competed monthly and reported quarterly first 24 months – now moved to quarterly. Two monitoring bores have been installed (MW10-MW11 near the entry point in Hexham and MW8-MW9 near the exit point in Tomago) to monitor groundwater levels during construction.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
	Groundwater monitoring will be undertaken throughout the life of the Project in the PPA in accordance with the groundwater management plan. In addition the groundwater management plan will make provision for additional groundwater monitored at the Hexham receiving station site and adjacent to HDD entry and exit points during construction. Water quality parameters to be monitored will be defined during development of the groundwater management plan for the site and determined in consultation with HWC, OEH and NOW. Groundwater monitoring results will be evaluated against natural background concentrations (the primary comparison) and have relevance to ANZECC 2000 ecosystem trigger values and NHMRC 2004 Australian drinking water guidelines. Thresholds will be defined in the groundwater management plan for the site and determined in consultation with HWC, OEH and NOW. Exceedances above the final adopted thresholds would trigger responses as outlined in the contingency flow chart. The indicative groundwater monitoring program schedule is outlined in Table 7.1.				

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
99	Spill Response will include: (1) Clean-up of the contamination source; (2) Assess the groundwater quality with respect to relevant guidelines; (3) Advise OEH, NOW and HWC of any spill or leakage to unpaved ground that has potential to impact groundwater; (4) Undertake hydraulic containment using one or more downstream pumping bores; (5) install additional monitoring bores and increase monitoring frequency; and (6) Pump the contained water to a treatment facility for treatment and reinjection to groundwater if the water meets criteria.	Preconstruction	CBI (1, 3, 6), AGL (2, 4, 5)	Compliance Open	GMSP 1. Appendix E 2. Section 2.0 3. Appendix E 4. Appendix E and Figures 5 & 6 5. Appendix E 6. Appendix E
100	Advise OEH, NOW and HWC of any spill or leakage to unpaved ground that has potential to impact groundwater.	Construction	CBI AGL	Compliance Open	OEH notified in GMSP, Emergency Response Plan, CEMP and PIRMP. GMSP – Appendix E also includes requirement to contact NOW and HWC Two incidents reported to EPA during reporting period.
7.3.4 Modifications to Management and Mitigation Measures for Groundwater					
101	A groundwater assessment (at Hexham site) based on site redevelopment details are carried out.	Preconstruction – Stage 2	AGL	Compliance Closed	Report completed
102	NOW will be consulted regarding any construction dewatering of pipeline excavations to ensure that any extractions are properly licensed (if required).	Construction – Stage 2	Other	Compliance Closed	Letter from NOW (dated 13/11/13) allows 3ML allowance before licensing required.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
103	AGL will ensure compliance with all statutory licensing requirements, including those stipulated by the conditions of approval.	Construction	AGL CBI	Compliance Open	GMSP – Section 5.0 Audit schedule, review of operations, CBI reporting
104	All water supplies for construction and operations will be sourced from an authorised and reliable supply.	Construction Operations	All subcontractors	Compliance Open	GMSP – Table 8-1 Water sourced from HWC metered standpipe to site
105	A groundwater management plan will be prepared in consultation with HWC, OEH and NOW. The groundwater management plan will include, but not be limited to: A description of the quantity and source of all surface water supplies relating to construction and operations; A description of all dewatering activities including the quantity of groundwater to be taken; In relations to groundwater levels and quality: (i) a detailed baseline data on groundwater levels and quality, (ii) Groundwater quality impact assessment criteria, (iii) a program to monitor the effects of any change in groundwater levels and quality on groundwater dependent ecosystems, (iv) A protocol for the investigation, notification and mitigation of identified exceedances of the groundwater quality impact assessment criteria, (v) A strategy to prevent illegal dumping of waste on the site and any access roads or tracks.	Preconstruction	AGL	Compliance Closed	GMSP – sent in email to DP&I dated 11 July 2012 with acceptance of plan received August 2012 for Primary Project Area. Email from HWC 31 October 2011 indicating satisfaction with plan. Email to DP&I 9 August 2012 with correspondence attached endorsing GMSP from NOW (i) Appendix C includes baseline water quality, depth. Duration and frequency of monitoring include in Table 5-2 Groundwater Monitoring Requirements (ii) Performance criteria included in Section 5.1.1 (iii) Section 5.1.1 for water quality and changes in water levels (using CUMSUM) (iv) Contingency Plan Flowchart Figure 5 and Appendix E for spills (v) WMSP – Table 7-7 Illegal Dumping

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
106	A groundwater monitoring piezometer will be installed and regularly sampled for pathogens and nutrients, downstream of the holding tank for wastewater.	Preconstruction	AGL	Compliance Closed	GMSP – Table 8.1. Refer SoC 86 (repeat). Groundwater bore located to north (down gradient) of sewage holding tank (MW5) Analytes tested for nutrients and pathogens such as E. Coli, total and faecal coliforms to indicate sewage contamination.
107	Groundwater monitoring data collected from the site will be provided to HWC, OEH and NOW.	Construction	AGL	Compliance Open	GWMP – Section 3.0 and Section 5.0 Groundwater monitoring completed monthly – minutes of meeting between NOW, HWC and PSC sighted which includes discussion on results and any exceedances. Results are forwarded to EPA via email (sighted).
108	Monitor and assess groundwater quality with respect to background concentrations.	Construction	AGL	Compliance Open	GMSP – Section 5.0 Groundwater monitoring completed monthly and reported quarterly for first 24 months – now sampled quarterly.
109	Conduct a review of the analytical suite of groundwater monitoring parameters following first 12 months of construction works.	Construction	AGL	Compliance Open	GMSP – Section 5.0, Appendix C Review completed. Monitoring moved to quarterly. List of analytes to remain unchanged until next review.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
110	Prepare remediation action plan which is likely to include hydraulic containment using one or more down gradient (new) pumping bores (in the event of spill).	Construction	AGL	Compliance Open	GMSP – Appendix E and Figures 5 & 6 GMSP outlines approach to be taken in event of spill/pollution which includes hydraulic containment. In relation to specific event AGL may provide support to CBI when CBI is developing management strategy.
7.4 Flora and Fauna					
7.4.1 Flora					
111	Limit the width of the construction right of ways for the gas pipeline (up to 10 m) where significant species and vegetation remnants are located (applies to gas pipeline corridor along northern boundary).	Preconstruction	CBI	Compliance Closed	FFMSP – Appendix B, Table 8-9 Vegetation Clearing Protocol, Table 8-10 Earp's Gum Protection Protocol The current WP drawings show the whole of the 30m easement being cleared along the gas access track, with 10m being used to create a track. Letter from ecoBiological 14/05/2012 confirming that there are no significant species or ecological communities which would limit the clearing to 10m.
112	Re-vegetate relevant sections of the right of ways with suitable native species that comply with pipeline license requirements (e.g., no large tree species) as soon as practicable following construction.	Preconstruction – Stage 2	Lucas Engineering	Compliance Open	Lucas added to their plans as required, however revegetation to be other groundcover.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
113	Allow an appropriate buffer distance (to be determined when developing the CEMP) between any construction activity and remnant native vegetation, where practicable. In such situations, strict erosion controls will be implemented to prevent sediment-laden runoff entering the adjacent vegetation.	Preconstruction	AGL All subcontractors	Compliance Open	VRSMP Appendix B Table 8-2 Silt fences installed around Primary Project Area and monitored regularly. Silt fences installed along Main Access Road and Gas Access Track – since been removed after conclusion of construction works with exception of south side of Main Access Road.
114	Ensure vehicle and equipment parking areas and stockpile areas are identified and sited to avoid areas containing ecological value.	Preconstruction	CBI AGL	Compliance Open	FFMSP – Appendix B Table 8-2 Access Table 8-10 Earp's Gum Protection Protocol VRSMP Appendix C SWMSP – Table 8-11 CEMP – includes location of stockpiles and offices. Areas located within delineated project area. ER and CBI inspections confirm locations. All clearing now completed for this phase of works. Designated vehicle parking inside primary project area. Stockpiles located in laydown area near north boundary.
115	Erect flagging tape to mark 'no-go' zones to ensure areas to be protected are clearly defined, identified and avoided.	Preconstruction	AGL	Compliance Closed - CBI	FFMSP – Appendix B Table 8-1 General Construction Table 8-6 Pre-clearing Protocol Table 8-10 Earp's Gum Protection Protocol Table 8-12 Koala Protection Protocol Table 8-13 Hollow dependant Threatened Fauna Protection Protocol

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
					VRSMP Appendix C Site inspections confirmed flagging tape delineated boundary of works during clearing activities. Permanent fencing installed along Main Access Road, Gas Access Track (north side) and around Gas Storage Facility. Temporary flagging now removed from all areas.
116	Identify appropriate biodiversity offsets consistent with 'improve or maintain' principles.	Preconstruction	AGL	Compliance Closed	Refer Offset Strategy ecoBiological May 2012
117	Use native vegetation grown from local seed banks for re-vegetation where appropriate.	Preconstruction	AGL (responsible for seed bank), Other responsible for re-vegetation	Compliance Open	VRSMP Appendix D, Appendix B Table 8-5 Dianella harvested prior to clearing and stored at Hexham office now planted along Main Access Road. No other revegetation completed to date.
118	Limit access to sensitive areas of riverbanks and riparian vegetation during construction of the pipelines where practicable to avoid inadvertent or unauthorised disturbance of adjacent vegetation.	Preconstruction	AGL	Compliance Closed	Pipeline design changed to underboring from trenching to avoid impacts to riparian areas
119	Reinstate logs and rocks, which are removed for pipeline construction, along the right of ways or relocate them to appropriate nearby habitats.	Construction – Stage 2 Operations	Lucas Engineering	Compliance Closed	Pipeline design changed to underboring from trenching to avoid impacts to riparian areas

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
120	Trim vegetation where possible rather than removing it.	Construction Operations	CBI	Compliance Closed	VRSMP Section 3.2 ER site inspections confirm trees left along boundaries and trimmed where possible – refer inspection reports.
121	Re-vegetate disturbed areas where possible, other than those required for permanent use, access to the easement or facilities or for bushfire protections areas. The following procedures will be followed during re-vegetation: • Reinstate topsoil; • Re-spread cleared vegetation in the Project area to facilitate natural regeneration of native vegetation, where appropriate; • Undertake weed control where necessary to promote the rehabilitation of re-vegetated areas; • In consultation with the landowner, fence rehabilitated areas until successful re-vegetation is evident or until such time as the landowner requests fencing to be removed; • Monitor rehabilitation success, and undertake supplementary active re-vegetation (as outlined above), if required.	Construction Operations	All subcontractors	Compliance Open	FFMSP – Appendix B Table 8-1 General Construction Table 8-9 Vegetation Clearing Protocol VRMSP – Table 8-2, Table 8-5, Section 3.1, Section 5
7.4.2 Fauna					
122	Prepare a detailed fauna translocation (displacement) protocol to assist in the translocation of wildlife during the clearing process.	Preconstruction	AGL	Compliance Closed	FFMSP – Appendix B Table 8.8 General Fauna Displacement Protocol

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
123	Use HDD where warranted.	Construction – Stage 2	Lucas Engineering	Compliance Closed	HDD used under riparian areas and along majority of Old Punt Rd. Trenching limited to small area at Forgacs site and along Gas Access Track. Low pressure pipeline installation to be via trenching.
124	Minimise the length of time that construction trenches remain open, particularly in areas where habitat for significant species has been identified nearby.	Construction	All subcontractors	Compliance Open	FFMSP – Appendix B Table 8-1 General Construction Trenches backfilled generally within 24 to 48 hours for all stages of project
125	Clear fauna from the right of way prior to vegetation clearing and implement mitigation measures where habitat is present.	Pre-clearing	AGL	Compliance Closed	FFMSP – Appendix B Table 8-9 Vegetation Clearing Protocol Clearing process now completed – Ecobiological completed report "Vegetation Clearing for Newcastle Gas Storage Facility" (November 2012) detailing fauna rescue and relocations. Total of 57 animals rescued from clearing zone.
126	Remove habitat features, such as rocks and logs, from the right of way prior to clearing, and carefully stockpile prior to clearing and return during easement restoration. Inspect these features for signs of fauna and remove habitat features prior to clearing the right of way.	Pre-clearing	CBI	Compliance Closed	FFMSP Appendix B Table 8-6 Pre clearing protocol. No rocks or logs suitable for restoration works were identified by Ecobiological as per report "Vegetation Clearing for Newcastle Gas Storage Facility" (November 2012).

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
127	Conduct pre-clearing surveys prior to any tree felling to identify hollow-bearing trees, which will be left standing, where practicable. Nesting boxes will be placed into nearby trees where hollow-bearing trees are removed.	Pre-clearing	AGL	Compliance Closed	FFMSP – Appendix B Table 8-6 Pre-clearing Protocol, Table 8-7 Hollow Bearing Tree Clearing Protocol Ecobiological detailed process in report "Vegetation Clearing for Newcastle Gas Storage Facility" (November 2012). ER site inspections also noted protocol followed – refer inspection reports. Clearing now completed.
128	Conduct pre-construction trapping and relocation of targeted species where possible in specified ecologically sensitive locations.	Pre-clearing	AGL	Compliance Closed	FFMSP – Appendix B Table 8-8 General Fauna Displacement Protocol Table 8-11 New Holland Mouse Protection Protocol Table 8-12 Koala Protection Protocol Ecobiological detailed trapping results in report "Vegetation Clearing for Newcastle Gas Storage Facility" (November 2012). No New Holland Mice found during trapping program. Clearing now completed
129	Monitor open sections of trenches as required for trapped animals, such as small ground-dwelling mammals, particularly in areas where sensitive habitat has been identified.	Construction	All subcontractors	Compliance Open	FFMSP – Appendix B, Table 8-15 Monitoring Excavations checked daily by CBI environment staff and Daracon subcontractors.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
130	Ensure fauna ramps are regularly incorporated into open sections of trench to allow animals that have fallen into the trench to make their way out	Construction	All subcontractors	Compliance Open	FFMSP All excavations observed during site inspections to have ramps for human and fauna escape.
131	Re-vegetate disturbed areas where possible, other than those required for permanent use, access to the easement or facilities, or for bushfire asset protection. Replace terrestrial habitat features, such as rocks and logs, following construction with landowner approval. Where landowner approval cannot be obtained, replace rocks and logs in another suitable location.	Construction	All subcontractors	Compliance Open	VRMSP - Table 8-5 Refer SoC 126 Earthworks still current within PPA, Hexham site and TAC easement. All other areas reinstatement works completed with exception of south side Main Access Road to be completed by Lucas.
132	Manage re-vegetated areas (specific techniques to be developed as part of the CEMP to prevent overgrazing from native fauna and introduced pest animals.	Construction	All subcontractors	Compliance Open	VRMSP - Table 8.5 Earthworks still current within PPA, Hexham site and TAC easement. All other areas reinstatement works completed with exception of south side Main Access Road to be completed by Lucas.
Gas Plant Site					
133	A number of avoidance and minimisation measures have been incorporated into the Project design, for example, the rigorous route selection of the pipeline alignments to avoid significant species and habitat.	Construction	AGL	Refer below	Design layout

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
Table 7.2 Avoidance and mitigation measures for flora and fauna at Gas Plant					
134	Gas plant facility will be located at the western end of the gas plant site and partially on previously disturbed land to minimise clearing of established flora and fauna communities (including preferred koala habitat), east of the gas plant site.	Preconstruction	AGL	Compliance Closed	Final design – plant is located at western end of land
135	Develop and implement comprehensive CEMP and OEMP. These documents will include detailed information about significant flora and fauna species, their management and on-going conservation recommendations.	Preconstruction Pre-operations	All subcontractors AGL	Compliance Open	FFMSP – CEMP completed OEMP to be developed for operations phase closer to commissioning. Process has commenced.
136	Clearing of Earp's gum will be minimised by: (1) Mapping location of individual Earp's gums within 100m of facility; (2) Marking sensitive 'no-go' areas; (3) Limiting amount of disturbance during construction phase; (4) Ensuring vehicles keep to designated tracks.	Preconstruction	AGL (1,2), CBI (3, 4)	Compliance Closed	FFMSP Appendix D – Table 8-10 1) Figure 2 of FFMSP 2) No go areas marked out with tape and parawebbing 3) Disturbance limited to project footprint 4) Access tracks only used for vehicles All controls noted as implemented in Ecobiological report "Vegetation Clearing for Newcastle Gas Storage Facility" (November 2012). Clearing completed – boundary delineated with fencing. Earp's Gums adjacent to boundary marked.
137	A biodiversity offsets strategy will be prepared and implemented in consultation with OEH and DSEWPaC.	Preconstruction	AGL	Compliance Closed	Refer Biodiversity Offset Strategy prepared by Ecobiological May 2012 Correspondence from DP&I accepting Strategy sighted.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
138	The CEMP will include management strategies to mitigate work-site lighting, dust suppression and noise associated with the construction phase of the Project.	Preconstruction	CBI	Compliance Open	CEMP Dust - AQMSP, Noise – NVMSP Site inspections indicate compliance during current construction activities Checklists include checks for noise, dust. Noise monitoring completed.
139	A habitat management plan will be prepared to document offset areas.	Preconstruction	AGL	Outstanding Open	AGL to develop plan.
140	The CEMP and OEMP will include vegetation and weed management plans to prevent spread of weed species and avoid disturbance on quality and functioning of sensitive ecological communities.	Preconstruction	CBI Other	Compliance Open	VRMSP – Table 8-4. Weeds sprayed prior to clearing works. Weed material stockpiled into separate piles and disposed off-site to landfill. Daily and weekly CBI inspections check for new weed outbreaks.
141	The OEMP will consider appropriate measures associated with lighting of facility, e.g., downward facing lighting, to minimise light pollution and impacts on light-sensitive fauna.	Pre operations	AGL	Outstanding Open	OEMP drafted and under review
142	Surface water management plan will be implemented, particularly the best practice sediment and erosion control measures, to avoid impacts on surface water quality.	Construction	CBI AGL	Compliance Open	SWMSP completed – implementation checked during daily and weekly inspections completed. Area relatively flat and ground sandy lowering erosion potential. Silt fences installed along work boundaries to prevent off site transport of sediment.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
143	Implement a pest animal control program on areas owned and/or managed by AGL to prevent increase in pest animal populations in the vicinity of the gas plant site.	Construction	CBI AGL	Compliance Open	FFMSP – Table 8-4 Feral Animals Wild dogs noted on site – EPA trapping program covers the area. No other pest animals noted on inspection reports or during ER inspections
144	Fencing will be in accordance with PSC's Koala Plan of Management to allow for fauna dispersion. Fencing around facility will be vermin proof security fencing to prevent fauna entering the site.	Construction	CBI	Compliance Closed	FFMSP – Table 8-12 Koala Protection Permanent fencing installed as per PSC's Koala Plan of Management (rural) with exception of fence around Tomago Caravan Park – requested by landholder.
Table 7.2 Avoidance and mitigation measures for flora and fauna at Access road and utility corridor					
145	The access road and utility corridor will be partially located on land already cleared for fire trails and for electricity easements. This will minimise clearing of key flora and fauna communities within the Swamp Mahogany and Woodland Rehabilitation communities.	Preconstruction	AGL	Compliance Closed	Final design of road access completed with fire trails and electricity easements used where possible.
146	The alignment of the access road and utility corridor will avoid clearing of Earp's gum.	Preconstruction	AGL	Compliance Closed	Initial design would have removed 67 Earps Gums. Final design removed 4.
147	Fencing around sensitive 'no go' areas will be erected and speed limits will be in accordance with PSC's Koala Plan of Management to avoid or minimise death or injury of wildlife.	Preconstruction	CBI	Compliance Closed	FFMSP – Table 8-1, 8-12 Site inspections indicate project areas marked with flagging initially and replaced with parawebbing once boundaries surveyed. Earps gums marked off with parawebbing prior to clearing.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
148	Perimeter fencing of Access Road and utility corridor will be in accordance with PSC's Koala Plan of Management to allow fauna dispersion beyond the corridor.	Preconstruction	CBI	Compliance Closed	FFMSP – Table 8-12 Koala Protection Protocol Permanent fencing installed along Gas Access Track and Main Access Road and PPA
Table 7.2 Avoidance and mitigation measures for flora and fauna at Gas pipeline access corridor					
149	Clearing of Redgum-Earp's gum-Apple-Banksia Forest will be minimised by: • Limiting amount of disturbance during construction phase; • Ensuring vehicles keep to designated tracks.	Preconstruction – stage 2	Lucas Engineering	Compliance Closed	No clearing of Redgum-Earp's gum-Apple-Banksia Forest for Stage 2 of works
150	Clearing of Earp's Gum-Apple Banksia Forest will be minimised by – Marking 'no go' areas where possible.	Preconstruction – stage 2	Lucas Engineering	Compliance Closed	No clearing of Redgum-Earp's gum-Apple-Banksia Forest for Stage 2 of works
151	Perimeter fencing of Gas pipeline access corridor will be in accordance with PSC's Koala Plan of Management to allow fauna dispersion beyond the corridor.	Preconstruction – stage 2	Lucas Engineering	Compliance Closed	Permanent fencing installed along Gas Access Track and Main Access Road and PPA
Table 7.2 Avoidance and mitigation measures for flora and fauna at Preferred pipeline corridor (option 2)					
152	Pipeline corridor will be located on previously disturbed land or alongside road easements to avoid removal of Swamp Mahogany-Paperbark Swamp Forest and Phragmites Rushland.	Preconstruction – stage 2	Lucas Engineering	NA Open	Stage 2 of works Use of HDD has avoided and/or minimised clearance of vegetation.
153	Selection of pipeline corridor (option 2) and HDD will be used to avoid removal of Phragmites Rushland, Hunter River, SEPP 14 Coastal Wetlands and SEPP 71 Coastal Protection Areas where practicable.	Preconstruction – stage 2	Lucas Engineering	Compliance Closed	Works used HDD to avoid Phragmites Rushland, Hunter River, SEPP 14 Coastal Wetlands and SEPP 71 Coastal Protection Areas

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
153A	The surface water management plan will be implemented to avoid disturbance from water runoff and erosion.	Preconstruction – stage 2	Lucas Engineering	Compliance Open	Surface Water Management Plan completed
154	Geotechnical investigations, specialist site design and suitable management of required materials will be carried out to minimise frac-out associated with HDD.	Preconstruction – stage 2	Lucas Engineering	Compliance Closed	Stage 2 of works AGL have completed geotechnical investigations prior to commencing works. This data has been used in planning construction works including frac-out mitigation measures as outlined in NGSF-LUC-HPW-PM-PLN-0010 Drilling Fluid Management Plan
155	Ensuring that works occur when favourable weather conditions prevail.	Construction – Stage 2 Operation	Lucas Engineering	Compliance Open	Checked during ER site inspections
155A	Use sediment fences and/or sterile straw bales down slope of exposed soil and stockpiles	Construction – Stage 2 Operation	Lucas Engineering	Compliance Open	Checked during ER site inspections
156	Undertake rapid seeding and re-vegetation of disturbed areas to limit the time soil is exposed to erosion.	Construction – Stage 2 Operation	Lucas Engineering	Compliance Open	Topsoil and mulch re-spread in Gas Access Track easement. Main Access Road north side stabilised. HDD work pads reinstated – to be stabilised via natural revegetation. Controls to remain until stabilised.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
Table 7.3 Mitigation measures for TSC Act-related flora and fauna at Gas Plant Site					
Table 7.3 Mitigation measures for TSC Act-related flora and fauna at Access Road and Utility Corridor					
156A	Worksite lighting will be kept to a minimum.	Construction Operation	CBI	Compliance Open	CEMP – Appendix A7 Table 12-5 No lighting along access road during current phase of works. All works competed during daylight hours with no permanent infrastructure installed including lighting.
157	The access road and utility corridor will be partially located on land already cleared for fire trails. This will minimise clearing of key flora and fauna communities within the Swamp Mahogany and Woodland Rehabilitation communities.	Construction Operation	CBI	Compliance Closed	Access road and utility corridor have been sited to minimise clearing of key flora and fauna communities within the Swamp Mahogany and Woodland Rehabilitation communities.
158	Explore implementing the following options: Use of passive means of lighting, such as installing reflector roadway markers, lines, warning or information signs and attaching reflectors to furnishings, Use solar-powered light emitting diode studs to highlight roadways and paths of travel, Use of directional lighting focussed only upon areas to be illuminated and not mounted higher than an appropriate height from grounds. This will assist in reducing visual impacts from light spill.	Construction Operation	CBI AGL	Compliance Closed	The roads into the NGSF employ reflectors and roadway markers into and around the site. NGSF uses directional lighting. OEMP includes lighting requirements
Table 7.3 Mitigation measures for TSC Act-related flora and fauna at Preferred Pipeline Corridor (Option 2)					

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
159	Pipeline corridor will be located on previously disturbed land or alongside road easements to avoid removal of Swamp Mahogany-Paperbark Swamp Forest and Phragmites Rushland.	Construction – Stage 2 Operation	Lucas Engineering	Compliance Closed	Pipeline installed in areas previously disturbed
160	Selection of pipeline corridor (option 2) and HDD will be used to avoid removal of Phragmites Rushland, Hunter River, SEPP 14 Coastal Wetlands and SEPP 71 Coastal Protection Areas where practicable.	Construction – Stage 2 Operation	Lucas Engineering	Compliance Closed	HDD used for majority of pipeline length – no clearing of Phragmites Rushland, Hunter River, SEPP 14 Coastal Wetlands and SEPP 71 Coastal Protection Areas for this stage of works
160A	The CEMP will include an ASS management plan to minimise potential ASS	Preconstruction – Stage 2	Lucas Engineering	Compliance Closed	ASS included in Soil Management Plan
160B	The surface water management plan will be implemented to avoid disturbance from water runoff and erosion	Preconstruction – Stage 2	Lucas Engineering	Compliance Open	Implementation checked during ER site inspections
160C	The CEMP and OEMP will include vegetation and weed management plans to prevent spread of weed species and ensure avoid disturbance on quality and functioning of sensitive ecological communities	Preconstruction – Stage 2	Lucas Engineering AGL	Compliance Open	Vegetation and Rehabilitation Plan developed for construction. OEMP to be developed
160D	Geotechnical investigations, specialist site design and suitable management of required materials will be carried out to minimise frac-out associated with HDD	Construction – Stage 2	Lucas Engineering	Compliance Closed	AGL have completed geotechnical investigations prior to commencing works. This data has been used in planning construction works including frac-out mitigation measures as outlined in NGSF-LUC-HPW-PM-PLN-0010 Drilling Fluid Management Plan.
160E	Use sediment fences and/or sterile straw bales down slope of exposed soil and stockpiles	Construction-Stage 2 Operation	Lucas Engineering	Compliance Open	Checked during ER site inspections

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
160F	Ensuring that works occur when favourable weather conditions prevail	Construction – Stage 2	Lucas Engineering	Compliance Open	Checked during ER site inspections
160G	Undertake rapid seeding and revegetation of disturbed areas to limit the time soil is exposed to erosion	Construction – Stage 2	Lucas Engineering	Compliance Open	Topsoil and mulch re-spread in Gas Access Track easement. Other areas still active
Table 7.3 Mitigation measures for TSC Act-related flora and fauna at SEPP 14 Coastal Wetlands					
161	HDD will be used to avoid removal of SEPP 14 Coastal Wetlands for preferred pipeline corridor (option 2).	Preconstruction – Stage 2 Construction	Lucas Engineering	Compliance Closed	Completed – HDD used. No further HDD works remaining.
162	The surface water management plan will be implemented to avoid disturbance from water runoff and erosion.	Construction-Stage 2 Operation	Lucas Engineering	Compliance Open	SWMP developed – implementation checked during ER site inspections
Table 7.3 Mitigation measures for TSC Act-related flora and fauna at SEPP 71 Coastal Protection Areas					
163	HDD will be used to avoid removal of SEPP 71 Coastal Protection Areas where practicable.	Construction-Stage 2 Operations	Lucas Engineering	Compliance Closed	Completed – HDD used
164	Construction right of way will be reduced to 10 m to minimise removal of SEPP 71 Coastal Protection Areas.	Construction-Stage 2 Operation	Lucas Engineering	Compliance Closed	Received letter from ecoBiological on 14-May-12 confirming no threatened species or ecological communities identified within the gas pipeline corridor and therefore SEPP71 vegetation will not be removed.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
Table 7.3 Mitigation measures for TSC Act-related flora and fauna at SEPP 44 Koala Habitat Protection					
165	The Project components will be sited to avoid or minimise preferred koala habitat where possible	Preconstruction	AGL	Compliance Closed	Final project layout sited to west to avoid koala habitat.
166	Clearing of supplementary koala habitat will be avoided or minimised through HDD or reducing construction right of way where practicable	Construction – Stage 2	Lucas Engineering	Compliance Closed	HDD used – no koala habitat removed
167	Identifying and restoring potential koala habitat will be undertaken in consultation with PSC	Construction Operation	AGL	Outstanding Open	To be assessed.
168	Fencing around pipeline easements within Lot 105 will be in accordance PSC's Koala Plan of Management to ensure Koala movement beyond the Project area	Construction Operation	CBI	Compliance Closed	FFMSP – Table 8-12 Koala Protection. Fencing for Lot105 has been specified by WP in detailed design work. Permanent fencing four wire rural fence in project area.
169	Speed limits along the access road and utility corridor will be in accordance with PSC's Koala Plan of Management to minimise injury or death to koalas and other wildlife	Construction Operation	CBI	NC-1 Closed	FFMSP – Table 8-12 Koala Protection Access road and utility corridor construction completed. Construction speed limit 20km/h. Operations speed limit 50km/h. PSC states speed limit to be 40km/h – raised as NC during audit.
Table 7.3 Mitigation measures for TSC Act-related flora and fauna at Habitat and corridors					
170	Construction right of way will be reduced, where possible, to minimise removal of sensitive vegetation and habitat.	Construction Operation	AGL	Compliance Closed	Pre-construction – surveys completed by Ecobiological prior to clearing to ensure endangered flora not removed. Sighting of access roads along fire trails and electricity easements completed where possible.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
Table 7.3 Mitigation measures for TSC Act-related flora and fauna at Instream habitats					
171	Geotechnical investigations, specialist site design and suitable management of required materials will be carried out to minimise frac-out associated with HDD.	Construction – Stage 2 Operation	AGL	Compliance Closed	Stage 2 of Project AGL have completed geotechnical investigations prior to commencing works. This data has been used in planning construction works including frac-out mitigation measures as outlined in NGSF-LUC-HPW-PM-PLN-0010 Drilling Fluid Management Plan
Table 7.3 Mitigation measures for TSC Act-related flora and fauna at Groundwater dependent ecosystems					
172	The implementation of management measures identified in groundwater assessment, including implementation of groundwater management plan and surface water management plan to avoid disturbance from water runoff and erosion, will avoid measurable impacts to groundwater quality, levels or flow and on GDEs.	Construction Operation	CBI, AGL to implement monitoring component	Compliance Open	GWMSP and SWMP developed and implemented. Audits against implementation completed as per CEMP.
173	Conduct pre-clearing surveys on identified clearing areas.	Pre-clearing	CBI	Compliance Closed - CBI	FFMSP – Table 8-6 Pre Clearing Protocol Ecobiological completed surveys in morning prior to works commencing. Refer Ecobiological report "Vegetation Clearing for Newcastle Gas Storage Facility" (November 2012).
174	All hollow-bearing trees to be soft-felled by experienced machine operator.	Construction Operation	CBI Lucas Engineering	Compliance Closed	FFMSP – Table 8-7 Hollow Bearing Tree Clearing Protocol. Refer Ecobiological report "Vegetation Clearing for Newcastle Gas Storage Facility" (November 2012).

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
175	Remove habitat features, such as rocks and logs, from the right of way prior to clearing, and carefully stockpiled prior to clearing and returned, where possible, during easement restoration.	Construction Operation	CBI	Compliance Closed	Refer SoC 126 and 131 No rocks or logs suitable for restoration works were identified by Ecobiological as per report "Vegetation Clearing for Newcastle Gas Storage Facility" (November 2012).
Table 7.4 Mitigation measures for EPBC Act-related flora and fauna for Earps Gum					
???	The gas plant facility will minimise clearing of the Woodland Rehabilitation community to the northern portion. This will avoid fragmentation of the existing Earp's gum population	Preconstruction Construction	AGL CBI	Compliance Closed	Siting of plant to west and north edge of project area. Four Earp's Gums removed during clearing works rather than 67 as originally assessed.
176	Clearing of Earp's gum will be minimised by: – Mapping location of individual Earp's gum within 100 m of gas plant facility and access road and utility corridor.	Preconstruction Construction	AGL	Compliance Closed	FFMSP – includes map with location of Earp's Gums.
177	Clearing of Earp's gum will be minimised by: – Marking 'no go' areas where possible.	Preconstruction Construction	AGL	Compliance Closed	FFMSP – Table 8-10 Earp's Gum Protection Protocol, site inspection reports. Earp's Gums on edge of project area marked with parawebbing to prevent accidental removal or damage. Project area defined by temporary taping replaced with parawebbing once boundary lines surveyed.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
178	Clearing of Earp's gum will be minimised by: – Limiting amount of disturbance during construction phase.	Preconstruction Construction	CBI	Compliance Closed	FFMSP – Table 8-9, site inspection reports Project area clearly marked. Vehicles remained on marked access tracks. Earp's Gums on edge of project area marked with parawebbing to prevent accidental removal or damage. Project area defined by temporary taping replaced with parawebbing once boundary lines surveyed.
179	Clearing of Earp's gum will be minimised by: – Ensuring vehicles keep to designated tracks.	Preconstruction Construction	CBI	Compliance Closed	FFMSP – Table 8-2 Access
Table 7.4 Mitigation measures for EPBC Act-related flora and fauna for Dwarf kerrawang					
180	No removal of potential dwarf kerrawang habitat is envisaged. However, clearing of potential suitable habitat will be limited to disturbed areas across the Project area.	Preconstruction Construction	CBI	Compliance Closed	Not included in FFMSP however, not required as no clearing of dwarf kerrawang habitat. EcoBiological mapped all vegetation on site and marked out limit of area to be cleared. Clearing restricted to marked areas as stipulated in FFMSP – Table 8-1 and Table 8-2.
Table 7.4 Mitigation measures for EPBC Act-related flora and fauna for New Holland mouse					
181	The clearing of suitable New Holland mouse habitat, the Heath Rehabilitation community, will be avoided.	Preconstruction Construction	AGL	Compliance Closed	Site inspections during pre-clearing and clearing, EcoBiological report issued. Final area to be cleared moved to west and north of project area to avoid area

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
182	The Project will minimise the clearing of similar suitable habitat (including Coastal Sand Apple-Blackbutt Forest) by where possible locating Project components in disturbed areas or by reducing construction widths of right of ways.	Preconstruction Construction	AGL	Compliance Closed	Site inspections during pre-clearing and clearing, EcoBiological Report issued – main access and pipeline corridor limited to fire trails and electricity easement where possible.
183	The OEMP will consider appropriate measures associated with lighting to minimise impact on the light-sensitive New Holland Mouse.	Preconstruction Construction	AGL	Outstanding Open	OEMP drafted and under review. The roads into the NGSF employ reflectors and roadway markers into and around the site. NGSF uses directional lighting.
183A	Prepare and detailed biodiversity offsets strategy that includes implementation of a recovery plan for the New Holland mouse in consultation with the OEH and DSEWPaC	Preconstruction Construction	AGL	Compliance Closed	Offset Strategy report prepared by ecoBiological dated May 2012 15-Aug-12: Approval received from the Director General. Biodiversity report states that PSC, OEH and DSEWPaC consulted during development of offset strategy
Table 7.4 Mitigation measures for EPBC Act-related flora and fauna for Migratory species					
184	HDD and reducing construction widths of right of ways will avoid or minimise removal of suitable habitat associated with regent honey eater, swift parrot, satin flycatcher, black-faced monarch and rufous fantail, respectively. These communities are: Alluvial Tall Moist Forest, Redgum-Apple-Banksia Forest, Swamp Mahogany-Paperbark Swamp Forest, Coastal Sand Apple-Blackbutt Forest.	Preconstruction Construction	AGL	Compliance Closed	ROW restricted to 30m and within design boundaries HDD used for Stage 2 of works where possible

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
Table 7.4 Mitigation measures for EPBC Act-related flora and fauna for Hunter estuary wetlands					
185	Geotechnical investigations, specialist site design and suitable management of required materials will be carried out to avoid risk of frac-out associated with HDD.	Preconstruction – Stage 2	Contractor	Compliance Closed	AGL have completed geotechnical investigations prior to commencing works. This data has been used in planning construction works including frac-out mitigation measures as outlined in NGSF-LUC-HPW-PM-PLN-0010 Drilling Fluid Management Plan. HDD works now completed – minor frac outs experienced along Old Punt Rd – reported to EPA and PSC.
	The surface water management plan will be implemented to avoid disturbance from water runoff and erosion	Preconstruction – Stage 2	Lucas Engineering	Compliance Open	Implementation checked during ER site inspections
	The CEMP will include an ASS management plan to avoid ASS entering the Hunter River	Preconstruction – Stage 2	Lucas Engineering	Compliance Open	ASS included in SMP. HDD used under Hunter River
186	The implementation of management measures identified in groundwater assessment, including the surface water management plan to avoid disturbance from water runoff and erosion, will avoid measurable impacts to groundwater quality, levels, flow and therefore on the Hunter Estuary Wetlands.	Preconstruction – Stage 2	Lucas Engineering	Compliance Open	Implementation checked during ER site inspections

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
187	Undertake rapid seeding and re-vegetation of disturbed areas to limit the time soil is exposed to erosion.	Preconstruction – Stage 2	Lucas Engineering	Compliance Open	Stage 2 Topsoil and mulch re-spread in Gas Access Track easement. Main Access Road north side stabilised. HDD work pads reinstated – to be stabilised via natural revegetation. Controls to remain until stabilised.
188	Noise attenuation measures associated with HDD will be considered to minimise impacts on significant bird species.	Preconstruction – Stage 2	Lucas Engineering	Compliance Closed	Stage 2 CEMP – NVMSP. All HDD now completed.
7.4.3 Monitoring					
189	Inspect 'no-go' areas to ensure they are clearly marked prior to clearing activities.	Pre-clearing	AGL	Compliance Closed - CBI	FFMSP – Appendix B Earps gums marked and other no go areas marked with tape initially. Now fenced. All clearing and scrubbing works completed with ecologist on site to prevent accidental clearing - refer to Ecobiological report "Vegetation Clearing for Newcastle Gas Storage Facility" (November 2012).
190	Conduct pre-clearing surveys prior to any tree felling to identify hollow-bearing trees, which will be left standing, where practicable. Nesting boxes will be placed into nearby trees where hollow-bearing trees are removed.	Pre-clearing	AGL	Compliance Closed - CBI	FFMSP – Appendix B Table 8-7 Hollow Bearing Tree Clearing Protocol Pre-clearing surveys completed by Ecobiological - refer to Ecobiological report "Vegetation Clearing for Newcastle Gas Storage Facility" (November 2012).
191	Conduct pre-construction trapping and relocation of targeted species in specified ecologically sensitive locations.	Preconstruction	AGL	Compliance Closed	FFMSP – Appendix B Trapping for New Holland Mouse completed by Ecobiological - refer to Ecobiological report "Vegetation Clearing for Newcastle Gas Storage Facility" (November 2012).

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
192	Supervise construction activities in sensitive areas to ensure procedures for spread move around, reduced right of way, HDD etc. are being implemented, where required.	Construction	CBI	Compliance Open	FFMSP – Appendix B Checked during ER Site Inspections
193	Monitor rehabilitated areas periodically to evaluate the success of rehabilitation procedures within Project components.	Construction	CBI, AGL	NA Open	VRMSP – Section 5.0 and Appendix B Table 8-5 Rehabilitation activities to be completed with exception of Main Access Road – checked during ER site inspections
194	Monitor trenched sections daily for trapped animals such as reptiles and small ground-dwelling mammals, particularly in areas where sensitive habitats have been identified.	Construction	CBI	Compliance Open	FFMSP – Appendix B Table 8-15 Monitoring Trenches closed within 24-48 hours. Pits in PPA monitored daily by contraction staff prior to commencing works

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
7.4.4 Biodiversity Offsets					
195	AGL will secure a biodiversity offsets package for the Project in consultation with OEH, DP&I and the DSEWPaC prior to the commencement of construction. It is currently proposed that the Biodiversity Offset Package will comprise: • Offsets which will be assessed in accordance with the Biobanking assessment methodology to ensure reasonably 'like for like' principle and vegetation types to those impacted by the Project. • Additional rehabilitation to offset loss of up to 15 Eucalyptus parramattensis (Earp's gum) from the development site. A number of potential offsets sites have been identified and AGL is committed to continuing to assess these sites and consult with landowners and the OEH, DP&I and DSEWPaC to determine the final preferred offsets. AGL is committed to securing the selected offsets in perpetuity with appropriate management regimes and financial security via one or more of the following mechanisms: • Conservation agreement under the National Parks and Wildlife Act 1974 (NSW) (NPW Act). • Dedication of land under the NPW Act. • Planning agreement under the EP&A Act • Trust agreement under the Nature Conservation Trust Act 2001 (NSW). • Biobanking agreement under the Threatened Species Conservation Act 1995 (NSW).	Preconstruction	AGL	Compliance Open	Referred to in FFMSP but detail in 'Conservation Agreement' with OEH Offset Strategy report prepared by ecoBiological dated May 2012 "BioBanking Assessment Methodology" (Seidel and Briggs 2009) adopted for determining the extent and type of offset required by AGL. Medowie Conservation Area Offset Monitoring Protocol prepared by ecoBiological dated May 2012 Draft Conservation Agreement for Lot 20 at 3 Old Swan Bay Road, Medowie Draft Conservation Agreement for Lot 16 at 218 Old Swan Bay Road, Medowie. 4 Earp's gums removed from development site. 60 plants will be established in Hunter Region Botanical Gardens Biodiversity report states that PSC, OEH and DSEWPaC consulted during development of offset strategy Correspondence from DP&I accepting Strategy dated 15 August 2012

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
7.4.5 Modifications to Management and Mitigation Measures for Flora and Fauna					
196	The internal access road into the gas plant site will be redesigned to greatly reduce the number of Earp's gum requiring removal.	Preconstruction	AGL	Compliance Closed	Road realigned to avoid clearing Earp's Gums. Four gums removed during clearing works – reduced from 67 predicted in EA. Minor clearing completed by Lucas Engineering during installation of low pressure pipeline – no trees cleared during works. Clearing now completed
197	Seed collected from Earp's gum within the site will be provided to the Hunter Botanic Gardens to propagate the seed and plant the seedlings on their property. A habitat management sub plan will be prepared which will detail the management and on-going protection of the remaining Earp's gum within the site.	Preconstruction	AGL	Outstanding Open	Long term management of Earp's gums include in Biodiversity Strategy, Ecobiological May 2012 Management of Earp's gums during construction detailed in FFMSP Appendix B Table 8-10. Habitat Management Sub Plan to be developed by AGL
198	A vegetation rehabilitation management sub plan will be prepared which will detail the management and on-going protection of the remaining Earp's gum within PPA.	Preconstruction	CBI	Outstanding Open	Management of Earp's gums during construction detailed in FFMSP Appendix B Table 8-10. OEMP to be developed.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
199	Additional targeted surveys will be undertaken in the appropriate season for Asperula asthenes, Galium australe, Lindernia alsinoides, Persicaria elatior, Zannichellia palustris and Maundia triglochinoides in areas of suitable habitat within the final development footprint prior to construction. Should any species be likely to be impacted by the proposal then such species will be adequately compensated for in the form of offsets	Preconstruction	AGL	Compliance Closed	Survey completed 25 Nov 2011. Offsets include in Offset Strategy, Ecobiological May 2012
200	A habitat management plan will be prepared (in consultation with the OEH and DSEWPaC) and implemented for the offsets and the development footprint.	Preconstruction	AGL	Outstanding Open	Habitat Management Plan to be developed and implemented by AGL
201	In order to protect Earp's gum, individual trees will be retained within the APZ.	Preconstruction	CBI	Compliance Closed	FFMSP – Table 8-1, Table 8-12, Site inspections. Trees within APZ area outside permanent fencing now installed.
202	There will be no direct disturbance to the Freshwater Wetlands Endangered Ecological Community (EEC), Riverflat Eucalypt Forest EEC and Swamp Sclerophyll Forest that are located along Old Punt Road (due to pipeline realignment and choice of construction technique).	Preconstruction – Stage 2	AGL	Compliance Closed	Final design and works completed along Old Punt Rd.
203	The proposed width of the gas pipeline access corridor will be reduced to 30 m which will reduce clearing in the Redgum-Apple-Banksia community (that contains Eucalyptus tereticornis) from 0.85 ha to 0.69 ha.	Preconstruction	AGL CBI	Compliance Closed	FFMSP – Table 8-2. Site Inspections Project areas delineated with permanent fencing. Gas pipeline access corridor 30m width

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
204	Any New Holland Mouse trapped will be translocated into areas safe away from development. This will be done in consultation with DSEWPaC.	Preconstruction	AGL	Compliance Closed	FFMSP – Table 8-11 New Holland Mouse Protection Protocol Five transects completed with no New Holland Mice captured. Refer to Ecobiological report "Vegetation Clearing for Newcastle Gas Storage Facility" (November 2012)
7.5 Bush Fire					
7.5.2 Emergency Planning					
205	An emergency response plan will detail required actions at construction sites for approaching bush fire danger. This emergency response plan will be consistent with the RFS Guidelines for the Preparedness of Emergency/Evacuation Plan and be in compliance with AS 3745-2002 'Emergency control organisation and procedures for buildings, structures and workplaces'. The plan will be prepared prior to construction.	Preconstruction	CBI	Compliance Closed	CBI's Bushfire Management Sub Plan includes reference to the AS
206	A CEMP will include measures for working in a bush fire-prone area. AGL will apply its standard procedures during construction e.g., hot work permits.	Preconstruction	CBI	Compliance Closed - CBI	BFMSP – Appendix B (Mitigation Measures) Table 12-13 in CEMP also has mitigation measures included

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
7.5.3 Access and Egress					
207	The design of the access road and utility corridor will be sufficiently wide to allow attending emergency vehicles and evacuating vehicles to pass unimpeded in case of fire. It will be accessible in all weather conditions and will be designed to have a minimum load rating to accommodate fire-fighting units. The gas pipeline access corridor will serve as an alternative access/egress road. It will be designed for one way traffic and for light vehicles only.	Preconstruction	AGL	Compliance Closed	Width of roads 30m to allow space for vehicles to pass. Main access road has been designed for general road traffic incl road tankers and emergency vehicles. Width of road caters for two way traffic. Gas access track designed for one way traffic and light vehicles as an alternative access/egress road. TMSP – Table 9-1 for requirement during construction phase
208	The access road and emergency access road will include adequate outer radius-turning circles at the entry of the gas plant site and vertical clearance will be maintained above the access road.	Preconstruction	AGL	Compliance Open	Referenced in ERP Table 1-3 Statement of Commitments Included in TMSP – Table 9-1 Area for turning around in laydown areas
7.5.4 Project Design					
209	The gas plant is classified as a Class 10 building under the BCA. The construction of buildings and infrastructure will be in accordance with AS 3959-2009 'Construction of Buildings in Bush Fire Prone Areas'.	Preconstruction	AGL	Compliance Closed	Pre-construction technical design CBI has stated all buildings are designed for BAL-29 as per AS 3959. As PDC is within 25m of the APZ it CBI has designed this building to withstand higher (Bushfire Attack Level) heat at BAL-40.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
7.5.5 Water and Services					
210	The bush firefighting water supply for the gas plant site will exceed the minimum volume requirement of 20,000 L (0.02 ML). The firewater tank will be able to direct water for fire suppression and cooling within the plant for a minimum of two hours. Fixed pumping systems, one electric and one diesel-engine driven, will be used. The water tank will be close to the southern boundary of the site and unimpeded access for emergency vehicles will be provided. Connections to the water tank will be provided for firefighting teams.	Preconstruction Operations	AGL	Compliance Closed	Pre-construction technical design NFPA 59A requires 2 hour fire water storage at maximum demand which exceeds this requirement. Note that the split to 2 x 50% tanks is still larger than the 20,000L requested by bush firefighting Additional firefighting tank to be installed.
7.5.6 Landscape and Vegetation Management					
211	A bushfire management plan will be prepared for the PPA. The plan will address the management and maintenance of bush fire mitigation infrastructure. Clearance within the easements will be maintained to ensure fuel loads are kept to a minimum.	Preconstruction	CBI	Compliance Open	BFMSP – Appendix B Table 8-1 Table 12-13 (Risk Register) in CEMP has mitigation measures included.
7.5.8 Modifications to Management and Mitigation Measures for Bush Fire					
212	APZs will be sized to provide a Bushfire Attack Level (BAL) of 29 kW/m2.	Preconstruction	AGL	Compliance Closed	APZ based on design – PPA cleared as per design
213	An emergency plan will be prepared in accordance with clause 174ZC of the Occupational Health and Safety Regulations 2001 (NSW) and the DP&I guidance note HIPAP 1, Emergency Planning.	Preconstruction	CBI	Compliance Open	CBI's PRP refer to both documents. AGL will be responsible for developing the ERP for the operations phase of the Project. A draft emergency response plan has been prepared and is going through internal AGL review

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
214	A fire safety study will be prepared and submitted to FRNSW for review and comment. The fire safety study will be compiled in accordance with NSW Department of Planning and Infrastructure guidance note HIPAP 2, Fire Safety Study Guidelines.	Preconstruction	CBI	Compliance Open	CBI –FSS August 2012 based on final design Letter dated 19-June requesting for approval of a staged approach to the HAZOP Study, Fire Safety Study and Final Hazard Analysis Process 6-Aug-12: Approval received from Director General for the proposed staged submission approach. 28-Nov-12: Submission of Phase 1 Fire Safety Study and Hazop Report to DP&I 10-Dec-12: Submission of Phase 1 Final Hazard Analysis to DP&I 19-Dec-12: Phase 1 Fire Safety Study approved by Rural Fire Service 17-Jan-13: Phase 1 submission approved by DP&I 5-Feb-13: Phase 1 Fire Safety Study approval by Fire & Rescue NSW 15-Feb-13: Meeting held with Fire & Rescue NSW to discuss their comments 6-Jun-13: Meeting held with FRNSW to discuss proposed mitigation to comments provided in February. 9-Sep-13: Submission of Phase 2 FSS to DoPI, FRNSW and RFS. 12-Sep-13: Phase 2 FSS approval by FRNSW. 23-Sep-14: Submission of Phase 3 FSS to FRNSW
215	The proposed emergency traffic arrangements will be reviewed and assessed to ensure compliance with the stated Emergency Vehicle Access Policy No. 4.	Preconstruction	CBI	Compliance Open	Requirement included in CBI's PRP

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
216	With regards to the LNG Tank, there are two sources to determine the APZ. The European LNG Code, EN 1473:2007 recommends a radiant heat less than 15kW/m2, which requires an APZ of 43m. The Department of Planning recommends a radiant heat less than 23kW/m2, which requires an APZ of 31m. The current site layout has a APZ of 46m (minimum), including the slashing zones, and therefore satisfies both requirements.	Preconstruction	AGL	Compliance Closed	Note
7.6 Aboriginal Cultural Heritage					
218	Maintain an Aboriginal cultural heritage site register.	Preconstruction Construction	CBI	Compliance Open	CHMSP refers to requirement in SOC Table 1-3. If artefacts are found will be added to register developed by CBI
219	Record all Aboriginal cultural heritage sites within proximity of the Project area in the CEMP and OEMP.	Preconstruction Construction	AGL	Compliance Closed	CHMSP – Section 2 and Figure 2-1
220	Train all employees and contractors as part of the induction process in the procedures to be followed in the event that Aboriginal cultural heritage sites, objects and/or remains are unearthed.	Preconstruction Construction	CBI	Compliance Open	CHMSP – Section 3-1 and Appendix A Induction includes overview of process if heritage item found. Specifics on heritage works discussed further in workshop 21 August 2012 with clearing contractors. Toolbox talks held by all subcontractors.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
221	Prepare a Cultural Heritage Management Plan (CHMP) in consultation with Aboriginal Stakeholders prior to construction for incorporation into the CEMP. The CHMP will address: a) The impact mitigation and management requirements for Aboriginal and historic heritage, b) Details of any additional archaeological investigations to be undertaken and any associated licences or approvals required, c) Procedures to be implemented if previously unidentified Aboriginal or historic objects are discovered during construction, d) Procedures if human remains found, e) An education program for construction personnel on their obligations for Aboriginal cultural materials and historic items.	Preconstruction	AGL	Compliance Closed	CHMSP a) Section 2-3, Section 4 b) Section 5-1 and Appendix C for legislative context c) Appendix A d) Appendix A e) Appendix A
222	Conduct a field survey of the PPA when the current dense vegetation layer is removed. This will be undertaken by a qualified archaeologist and representatives from the Worimi Local Aboriginal Land Council, Mu-Roo-Ma Inc, Nu-Run-Gee Pty Ltd and the GGAC.	Preconstruction Clearing	AGL	Compliance Closed	CHMSP – Section 5-3 Three inspections of the site were completed by the groups. 30 August 2012 – understory vegetation removed 7 September 2012 – all material cleared 24 September 2012 – topsoil removed. 15 October 2012 – sub soil removal 24 October 2012 – unexpected find

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
223	Regular monitoring of implementation of Aboriginal cultural heritage procedures, including the CHMP, and relevant legislation will be conducted to ensure that they are followed by staff and contractors.	Construction	CBI AGL Lucas Engineering PowerServe	Compliance Open	CHMSP Table 5-1 indicates weekly inspections and internal audits completed. Daily and weekly checks for heritage issues conducted by CBI environment staff. JBS&G undertaking inspections weekly or fortnightly depending upon works. Quarterly audits can include CHMSP
7.7 Non-Aboriginal Cultural Heritage					
224	The CHMP will include procedures in the event that significant non-Aboriginal cultural heritage material is unearthed during construction of the Project.	Preconstruction	AGL CBI	Compliance Closed	CHMSP – Appendix A All subsoil works completed on PPA – no non-Aboriginal cultural heritage material found.
225	All staff and contractors will be inducted and trained in cultural heritage procedures and the CHMP so they are aware of their obligations under the NSW Heritage Act.	Preconstruction Construction	CBI	Compliance Open	CHMSP – Section 3-2 Induction included overview of process if heritage item found. Specific training on heritage find identification delivered to clearing contractors at workshop 21 August 2012. Toolbox held on topic when relevant to area or works.
7.8 Socio-Economic Environment					
226	Employ a strategy that focuses on equipment suppliers, trades and services, within the Port Stephens and Newcastle LGAs, boosting the local economy.	All	CBI	Compliance Open	Subcontractors have been sourced from Newcastle are including Wards Engineering, Newcastle Earthworks, Antquip, PowerServe, local office for Downer EDI

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
227	Meet the construction and operations noise goals of the Project to minimise disturbance to sensitive receptors.	All	CBI	Compliance Open	NVMSP – Section 2.0 Monitoring completed – results entered into register. Night time monitoring completed near site office with noise goals exceeded and audibility of site works evident, however not audible/below noise goals at site boundary.
228	Use local labour where appropriately qualified people are available to minimise the influx of workers to the area during construction and reduce the risk of subsequent potential impacts on rental prices.	All	CBI	Compliance Open	Bulk earthworks and clearing completed by subcontractors sourced from local area
229	Outline accommodation options for workers during inductions and encouraged, where practicable, to share houses during construction.	All	CBI	Compliance Open	Bulk earthworks and clearing completed by subcontractors sourced from local area
230	Consult with local accommodation providers and tourism industry representatives on an on-going basis to manage potential impacts on short-term accommodation, particularly during peak construction periods.	All	CBI	NA Open	Not checked
7.8.3 Property					
231	Access to properties will be maintained during pipeline construction works and pipeline trenches will be progressively reinstated to minimise impacts on the use of land.	Preconstruction Construction	CBI	Compliance Open	27.02.12: CBI only responsible where their work crosses TAC private access road and Old Punt Rd associated with stormwater pipe. Access to properties along Old Punt Rd maintained. Lucas Engineering primarily used underboring technique along Old Punt Rd. Pads were located away from access points to properties.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
232	Minimise the requirement for roadworks along the section of Old Punt Road passing through the Tomago industrial estate between Kennington Drive and Old Punt Road and Laverick Avenue and Tomago Road intersections.	Preconstruction – Stage 2 Construction	AGL	Compliance Open	Trenching alongside of Old Punt Rd – traffic control used where required for safety.
7.8.4 Employment, Training and Local Business					
233	Engage local businesses where possible to service the Project both during construction and operations. Detailed advanced notices of goods and services required by the Project will be issued to assist local businesses meet the needs of the Project.	All	CBI AGL	Compliance Open	Bulk earthworks and clearing completed by subcontractors sourced from local area. Check if advanced notice issued - not checked this audit.
7.8.5 Social Infrastructure					
234	Community consultation will be on-going during the life of the Project.	All	CBI AGL	Compliance Open	Procedure provided in the Community Engagement Plan (Document no: NGSF-AGL-NAS-PM-PLN-0002) - Section 4 Minutes of CCC Meetings are available on the Project website.
235	Notify the local community by means of public notice publications and advertisements on the progress of the Project and the scheduling of works.	All	CBI AGL	Compliance Open	Provided in the Community Engagement Plan (Document no: NGSF-AGL-NAS-PM-PLN-0002) Project signboards have been erected on site at Hexham and Tomago with contact details Contact details advertised on project website – details also included in Newspaper advertisement published in: • Port Stephens Examiner • Newcastle Herald

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
					Refer to Project Website for copies. Notices indicate expected operational date (mid 2015) and that AGL will continue to inform the community throughout all stages of the project
236	Preventative occupational health and safety measures and awareness programs will be implemented.	Construction	All subcontractors AGL	Compliance Open	Toolbox talks held weekly (records sighted) which discussed any topical issues Pre-starts held daily highlighting hazards and discussing works to be completed that day
237	All staff, contractors and site visitors will undergo site inductions, be conversant with the construction safety management plan and the emergency management plan, as well as occupational health and safety requirements as specified by specialist contractors, professional bodies and unions.	Construction	CBI	Compliance Open	CEMP –Section 3.2 Training and Awareness PIRMP – Section 3.2 Training and Awareness Induction records maintained – all staff required to undergo inductions prior to commencing works on site Review of induction content completed August 2012.
238	Working relationships will be developed with local area emergency services providers, including Raymond Terrace Police, Ambulance and Fire services, and regional hospitals to advise on risks relating to on-site work and prepare for emergencies. Assistance will be provided with emergency training. This process will begin prior to construction.	Construction	CBI AGL	Compliance Open	BFMSP – Section 3.1 for Fire Services stakeholder consultation once plan completed. Visit to Rural Fire Service command centre in Raymond Terrace completed with discussion of plan completed. RFS was invited to site to complete toolbox for bushfire management however RFS has not attended site to date. Police and ambulance are aware of site however, specific relationships are yet to be developed.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
239	A zero-tolerance on-site drug and alcohol policy will be enforced.	Construction	CBI	Compliance Open	Random breath testing completed during pre-starts and results recorded in register. Drug testing is not currently completed as type of testing appropriate to site to be confirmed i.e. blood, urine, saliva swab etc.
240	As the Project will be classified as a Major Hazard Facility, the Project will comply with the requirements for hazard and risk management under the National Standard for the Control of Major Hazard Facilities administered by NSW WorkCover. The National Standard for the Control of Major Hazard Facilities requires that relevant community and employee groups are consulted.	Construction	CBI AGL	Compliance Closed	MCoA B16 states that a Final Hazard Analysis of the project, consistent with Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis (DoP, 2011) shall be developed. The FHA shall report on the implementations of the recommendations of the Preliminary Hazard Analysis. 10-Dec-12: Submission of Phase 1 Final Hazard Analysis to DP&I 27-Sep-13: Submission of Phase 2 FHA to DoPI 31-Oct-13: Phase 2 FHA approved by DoPI 12-Sep-14: Submission of Phase 3 FSS, FHA, HAZOP report
241	Prior to operation of the Project, a safety management system will be implemented, which will include an emergency response plan.	Operations	AGL	Outstanding Open	PRIMP has been developed for construction phase Safety management system and procedures has been developed and implemented for construction To be developed for operations

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
242	Project design will provide sufficient open space for emergency vehicles and equipment including firefighting and rescue.	Preconstruction	CBI	Compliance Open	Check of final design not completed as part of this report Refer SoC 207 and 208 TMSP – Table 9-2
243	Two suitably qualified first aid officers (with access to basic medical facilities) will be on duty at all times during construction activities associated with the gas plant, the receiving station in Hexham and the pipeline corridor, and at all times at the gas plant during operations.	Construction	CBI AGL	Compliance Open	CBI advised that they have more than two qualified first aiders in addition to a full time nurse (commencing 22-Jul-13)
7.8.6 Monitoring					
244	The number of jobs created by the Project for local residents during the construction period to assist in quantifying the positive impacts of the Project on workforce participation.	Construction	CBI	Compliance Closed	Economic Benefits Report completed which details number of FTE. Report estimates the weighted average local content at 35% of materials and labour.
245	Stakeholder feedback via the implementation of a community information line to ensure that issues associated with the Project are appropriately addressed.	Construction	AGL	Compliance Open	Information line advertised on website
246	The local community's response and awareness of the Project as a result of the community consultation program.	Construction	AGL	Compliance Open	AGL participates in a community consultative committee for the NGSF which provides a mechanism for exchange of information between the community and AGL. In addition, AGL regularly advertises an information/complaints hotline number, email address, website and postal address whereby the community can make contact for more information.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
247	Long-term benefits to the community achieved by AGL's partnering with stakeholders.	Construction	AGL	NA Open	NGSF grants summary doc and media release (140303) - AGL Announces annual $25000 community grant program for Greater Newcastle Area. Additional information is included in the Economic Benefits Report regarding economic benefits.
7.9 Visual Amenity					
248	Colour selection of office buildings will be considerate of the surrounding environment.	All	CBI	Compliance Closed	The colour selection of the admin building was determined by taking into account the natural and built environment. The sandy colour schemes provides a bridge to the natural and built divide by being consistent, and therefore blend into the gas plant, but also sympathetic to the natural surrounds through adopting a colour that integrates with the sandy soils, which are prevalent in the area. Final colour confirmed during site inspections
249	Existing vegetation will be retained where possible to act as a visual screen.	All	AGL	Compliance Open	Only required area for PPA, access track and pipeline cleared. All other vegetation in Project area retained. Project is not visible from surrounding roads, residences or businesses. Hexham Receiving Station has retained trees on east and southern boundary.
250	Additional screen planting will be undertaken on the front and side boundaries of the Hexham receiving station site. Planting will need to allow for the final site layout, location of underground infrastructure and any security surveillance requirements.	All – Stage 2	Lucas Engineering	Outstanding Open	To be completed

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
251	On completion of the pipeline construction, disturbed areas of land will be rehabilitated and returned to previous use.	All – Stage 2	Lucas Engineering	Compliance Open	High pressure pipeline route reinstated. Low pressure pipeline works to be completed.
7.10 Traffic					
252	A construction traffic management plan will be prepared for the Project to minimise any impacts on the road network. Measures in the construction traffic management plan will include: a) Transportation of equipment and machinery likely to cause delays to traffic flows will be timed to avoid peak traffic flows, where practicable; b) Ensure heavy vehicles meet the Australian Road Rules and RTA standards so that road safety is not compromised; c) Transport oversized equipment and machinery in accordance with the RTA guidelines for oversized movements; d) Implement appropriate signage to warn road users of the presence of construction vehicles as well as changes to the normal traffic conditions.	Preconstruction	CBI	Compliance Closed	Traffic Management Sub Plan (TMSP) a) Table 9-1 b) Section 2.7 and Table 9-1 c) Table 9-1 d) Table 9-1
253	Notify the local community by means of public notice publications and advertisements on the progress of the Project and the scheduling of works so as to inform the local community of any additional vehicles added onto the local road network.	All	CBI AGL	Compliance Open	TMSP – Table 9-3 Notification Section 3 AGL needs to sign off any public notices regarding the project.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
254	These measures (relating to traffic) will be developed and implemented in consultation with the RTA, Port Stephens Council and Newcastle City Council.	All	CBI	Compliance Open	TMSP - Section 3.1
255	It is anticipated that some Project components will be transported as over-dimensional loads during construction. Required permits will be obtained.	All	CBI	Compliance Open	TMSP – Table 9-1
256	The pipeline construction may necessitate the partial closure of traffic lanes along Old Punt Road during pipeline installation. Temporary decking will be implemented if required during the trenching works to allow vehicles to traverse the open trench. The construction traffic management plan will outline management measures to protect pedestrian, cyclist and vehicular movements.	All – Stage 2	Lucas Engineering	Compliance Open	Trenching completed on side of Old Punt Rd only
257	Operation traffic management controls will be implemented to ensure staff, contractor and public safety relating to vehicle transport. Safe driver conduct policies and standards will be applicable to all AGL staff and contractors. Other controls include: • Implement driver and pedestrian safety awareness programs, • Review speed limits across the Project sites for all vehicles, • Conduct a random alcohol and drug testing program.	Operations	AGL	Compliance Open	OEMP drafted and under review

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
258	A detailed construction traffic management plan will be prepared and implemented	All	CBI	Compliance Open	TMSP prepared. Implementation to be checked (on-going)
259	A number of temporary construction compounds will be required along the route of the pipeline for its construction. Safe traffic movement in and out of these sites will be described in the construction traffic management plan.	All – Stage 2	Lucas Engineering	Compliance Open	Stage 2 TMSP developed
260	Temporary impacts to road infrastructure by the Project during the construction phase will be rehabilitated and reinstated by AGL.	All – Stage 2	AGL	Compliance Closed	Works were on side of Old Punt Rd. TAC Northern Access Road used underboring techniques. Water line and low pressure pipeline impacted TAC Northern Access rd. – now reinstated and repaired. All works along/across roads now completed
261	AGL will carry out HDD beneath the Old Punt Road and Tomago Road intersection to avoid disruption to traffic during the Project construction phase.	All – Stage 2	Lucas Engineering	Compliance Closed	HDD completed
262	AGL shall arrange for a public liability policy to cover the RTA and the relevant Council for public liability in relation to this contract/works for an amount of $20 million.	All	AGL	NA Open	Not checked
263	Use of the existing infrastructure of the Hexham receiving station where possible, noting that there is existing parking and access to the site.	All – Stage 2	CBI	Compliance Open	Existing roads and car park used during works

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
7.11 Noise and Vibration					
7.11.1 Noise					
264	A noise and vibration management plan will be prepared as part of the CEMP and OEMP to ensure noise levels are adequately controlled and any impacts managed. The traffic noise management plan will be prepared within the construction traffic management plan. It will be prepared in line with practices outlined in DECCW Interim Construction Noise Guideline 2009 and DECCW Environmental Criteria for Road Traffic Noise 1999 and in consultation with the Port Stephens Council, Newcastle City Council and OEH. The CEMP will be implemented by AGL and the construction contractors.	All	CBI	Compliance Open	Noise and Vibration Management Sub plan (NVMSP) TMSP – Table 9-4. Consultation with PSC, NCC and EPA to be checked with AGL
265	Noise emissions will be confirmed for equipment and infrastructure (including low frequency noise) during detailed design when final specifications are known. The potential for high-flow gas flaring at the gas plant site will be reviewed and noise assessment may be required to determine impacts of noise associated with high-flow gas flaring.	All	AGL	NA Open	Technical design spec To be completed prior to operations phase
266	Construction and operation activities will be undertaken with a focus on noise control at source, noise attenuation and in consultation with potentially affected receptors to minimise the risk of noise exceeding noise criteria and disturbing sensitive receptors. The following measures will be implemented (where practical) to manage impacts of noise and ensure Project goals are met:	All	CBI	Refer below	NVMSP completed with mitigation and management measures included in Appendix B. EA Noise component indicate construction noise will not exceed criteria at the sensitive receptors.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
267	Stage Project activities (and reduce simultaneous noise emitting practices) to reduce peak noise levels.	All	CBI	Compliance Open	NVMSP – Appendix B Table 8-2 Hours of Construction Earthmoving now completed. Works emitting noise limited to dust cart, trucks delivering concrete and equipment, welding, small vehicles. Arc welding nosiest activity – scheduled during normal work hours. HDD at HDD2 was not undertaken concurrently with excavation of trenches
268	Incorporate attenuation (such as mufflers) into the design of Project equipment and infrastructure.	All	CBI	Compliance Open	NVMSP – Table 1-5 and Table 8-3 Vehicles are checked prior to entry on site – includes checks for silencers and mufflers. Daily pre start checks include check for excessive noise.
269	Orient equipment away from receptors.	All	CBI	Compliance Open	NVMSP – Appendix B Table 8-3 Operation of Vehicles, Plant and Machinery Predicted noise levels from current site works not audible at nearest receptor (Botanical Gardens). At HDD2, noisiest equipment (mud pumps) located at lowest level of site with containers located on higher level closer to Caravan Park to minimise noise in Park through shielding and orientation.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
270	Restrict noise generating construction activities to daytime hours (7.00 a.m. to 6.00 p.m. Monday to Friday and 8.00 a.m. to 1.00 p.m. Saturday). In special circumstances, if noise generating evening or night work is required, a consultation process will be undertaken to ensure noise impacts can be adequately controlled. This will be the case for horizontal directional drilling works, which will occur 24 hours a day, 7 days per week.	All	CBI	Compliance Open	NVMSP – Appendix B Table 8-2 Hours of Construction Activities completed during work hours. OOHW inaudible. HDD works 24hrs in accordance with condition. Other works undertaken during standard work hours identified in Table 3-3 of NVMP. Lucas have consulted with identified sensitive receivers at R4, R5 and R6
271	Schedule high noise generating activities for less sensitive times of the day (including periodic respite breaks from noise).	All	CBI	Compliance Open	NVMSP – Appendix B Table 8-2 Hours of Construction No high noise generating activities during period of reporting
272	Consult potential noise receptors (particularly those within 500 m of the gas pipeline works) about the nature of the noise emissions and avoidance and mitigation practices to be adopted. Complaints and feedback and will be recorded and addressed where practical.	All	CBI	Compliance Open	NVMSP - Section 3.1 and Table 8-1 General Construction No works within 500m of sensitive receptors during period of reporting with exception of botanical gardens and Tomago Holiday Park. Liaison with Tomago Holiday Park competed by Lucas Engineering. One complaint received during works at HDD2. OOHW notified to community section AGL

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
273	Ensure vehicles and equipment are in good working order and have effective noise reduction features.	All	CBI Lucas Engineering	Compliance Open	NVMSP – Appendix B Table 8-3 Operation of Vehicles, Plant and Machinery Vehicles checked daily – records kept. CBI environment staff note levels during daily and weekly site inspections Lucas Engineering conduct spot noise checks on equipment.
274	Ensure that best practices for noise attenuation (such as exhaust silencers, mufflers and enclosures) and noise minimisation are incorporated into the design of the gas plant and Hexham receiving station.	All	CBI	Outstanding Open	Technical design spec not checked as part of this report
275	Consult potential noise receptors about the nature of operations noise emissions and avoidance and mitigation practices to be adopted. Feedback and complaints will be recorded and addressed where practical.	Operations	AGL	Outstanding Open	OEMP to be developed for operations phase
276	Monitor noise levels during operations to ensure localised noise creep (increase in local ambient noise) is not occurring due to the Project.	Operations	AGL	Outstanding Open	OEMP to be developed for operations phase
7.11.2 Vibration					
277	Construction activities will be implemented with a focus on vibration control at source and consultation with potentially affected receptors.	Construction	CBI	Compliance Open	NVMSP – Table 8-3 Operation of Vehicles, Plant and Machinery Vibratory roller and vibro compaction completed during reporting period – site inspections indicate impacts localised

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
278	The following measures will be implemented (where practical) to manage impacts of construction vibration and ensure Project goals are met:	Construction	CBI	Refer below	Refer below
279	Use alternative, lower-impact equipment or methods where practicable.	Construction	CBI	Compliance Open	NVMSP – Appendix B Check of vibration at boundary indicates no off site impacts.
280	Operate high vibration equipment as far away from receptors as possible. Rock-breakers will not be used within 20 m of residences.	Construction	CBI	Compliance Open	NVMSP – Table 8-3 Operation of Vehicles, Plant and Machinery. Check of vibration at boundary indicates no off site impacts.
281	Schedule vibration-causing equipment to be used at the least sensitive time of day (times of day to be determined in consultation with local stakeholders, including councils).	Construction	CBI	Compliance Open	NVMSP – Appendix B Vibratory roller and vibro compaction completed during previous reporting periods – site inspections indicate impacts localised. No sensitive receptors impacted.
282	Keep equipment well maintained.	Construction	CBI	Compliance Open	NVMSP – Appendix B Table 8-3 Operation of Vehicles, Plant and Machinery. Vehicle checklist completed daily prestart. Records maintained.
283	Reduce instances of simultaneous vibration activities.	Construction	CBI	Compliance Open	NVMSP – Appendix B Table 8-3 Operation of Vehicles, Plant and Machinery Vibratory roller and vibro compaction completed during previous reporting periods – works in different areas with site inspections indicating no cumulative impact.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
284	Isolate high vibration equipment on resilient mounds.	Construction	CBI	Compliance Open	NVMSP – Appendix B Table 8-3 Operation of Vehicles, Plant and Machinery Nil high vibration equipment used during audit period
285	Consult potential receptors about the nature of construction vibration and avoidance and mitigation practices to be adopted (particularly those within 500 m of the pipeline works, including the receptor R5 (217 Old Maitland Road)). Community feedback and complaints will be recorded and addressed where practical.	Construction	CBI	Compliance Open	NVMSP – Appendix B Table 8-1 General No vibratory works completed within 500m of sensitive receptors during reporting period
7.11.3 Monitoring					
286	Noise emissions during construction and operations to ensure equipment is meeting noise certification and criteria requirements and detect any faulty or damaged equipment.	All	CBI Lucas Engineering	Compliance Open	NVMSP - Section 5.0 Monitoring as per the NVMSP implemented. Baseline assessment monitored noise at the Botanic Gardens (R1), 5 Graham Drive (R2), 25 School Drive (R3), Caravan Park (R4), 217 Old Maitland Road (R5) and 185 Old Maitland Road (R6). Noise monitoring not completed at receptors during audit period. Checks on equipment completed.
287	Vibration levels during construction to ensure vibration criteria are being met.	All	CBI	Compliance Open	NVMSP - Section 5.0 Daily checks for vibration at site boundary completed.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
288	Responding to community complaints in line with EPA license conditions.	All	CBI AGL	Compliance Open	NVMSP - Section 5.0 No formal complaints received during the reporting period – refer complaints register
7.12 Air Quality					
289	Minimise vegetation clearance to reduce the areas of exposed soil.	Construction Operations	AGL	Compliance Open	Pre-Con - Site Layout - Detailed design AQMSP – Appendix B Table 8-1 General Vegetation clearance limited to areas required for roads and primary project area. Clearing now completed.
290	Water construction sites during dry windy conditions as required, including cleared areas, soil stockpiles and unsealed roads.	Construction Operations	CBI	Compliance Open	AQMSP - Appendix B Table 8-1 General Daily checklist includes monitoring for dust levels. No dust issues noted during site inspections.
291	Undertake activities likely to generate dust during favourable meteorological conditions where practical. Earth moving activities will be modified when wind speeds exceed 30 km/h if excessive dust is generated.	Construction Operations	CBI	Compliance Open	AQMSP - Appendix B Table 8-1 General and Table 8-4 Extreme Weather Conditions Daily checks for excessive dust is completed and dust cart used to limit generation as required
292	Prevent dirt being carried onto the TAC Northern Access Road or Old Punt Road from the access road where it could form dust.	Construction Operations	CBI	Compliance Open	AQMSP - Appendix B Table 8-1 General Main Access Road now sealed with bitumen – no further tracking issues expected.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
293	Load trucks transporting any potential dust generating material off site to below the height of the side and tail board and cover the load.	Construction Operations	CBI	Compliance Open	AQMSP - Appendix B Table 8-1 General Soil not transported from site with exception of ASS treated soil – filled below rim of container and covered with tarp.
294	Enforce vehicle speed limits on unsealed roads to reduce dust generation.	Construction Operations	CBI	Compliance Open	AQMSP - Appendix B Table 8-1 General Speed limit signage placed on site (10km/h) and along Main Access Rd (50km/h) – sealed surface.
295	Re-vegetate as soon as practical.	Construction Operations	AGL	Compliance Open	AQMSP - Appendix B Table 8-5 Re-vegetation of Cleared Areas Main Access Rd stabilised with mulch and spray grass. Batters in PPA spray grassed.
296	Maintain trucks and construction equipment in accordance with the manufacturers' specifications and comply with all relevant regulations.	Construction Operations	CBI	Compliance Open	Daily checks completed on machinery which includes air emissions. Maintenance completed as required.
297	Avoid unnecessary idling of trucks, plant and engines.	Construction Operations	CBI	Compliance Open	AQMSP - Appendix B Table 8-2 Vehicle, Plant and Equipment Management and Maintenance
298	Plan material deliveries to avoid congestion and excessive truck queuing and truck idling.	Construction Operations	CBI	Compliance Open	AQMSP - Appendix B Table 8-1 General Approximately 1-2 trucks per day deliveries. Concrete trucks staggered to avoid queuing – only minor concrete pours left on Project. No congestion noted during site inspections
299	Project equipment, machinery and vehicles will meet exhaust air quality standards and will comply with state regulations. Machinery will be fitted with the appropriate emission control equipment and will be	Construction Operations	CBI	Compliance Open	Daily checks completed on machinery which includes check for excessive air emissions. Maintenance completed as required.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
	maintained and serviced frequently.				Incoming vehicles – exhaust emissions checked.
300	Project equipment will be designed to enable monitoring of operating performance to ensure the equipment is operating according to manufacturer's specifications.	Construction Operations	CBI	Compliance Open	Machinery noise spot checked and compared to design specifications.
301	A monitoring program will be established to ensure regular (or continuous) monitoring of air emissions.	Operations	AGL	Compliance Open	OEMP drafted which includes monitoring plan – under review
302	The access road will be sealed during operations to prevent the generation of dust by vehicles using the road and to dirt being carried onto the TAC Northern Access Road or Old Punt Road where it could form dust.	Operations	AGL	Compliance Closed	Main Access Road sealed with bitumen.
303	Monitoring of the Project emissions will be in accordance with current AGL practice. Emissions of pollutants are reported annually in the National Pollution Inventory (NPI).	Operations	AGL	Outstanding Open	OEMP drafted and under review
304	Chemicals and analytes, including glycol, used across the Project for dehydration, rehydration and refrigeration will be monitored and modelled.	Operations	AGL	Outstanding Open	Potential contamination impacts from Glycol were modelled in the project EA. Monitoring of glycol will be included in the OEMP – AQ sub-plan. OEMP drafted and under review.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
305	Liaison will continue with OEH in relation to the licensing requirements for the Project under the POEO Act and the proposed draft conditions for the environmental protection licence.	Operations	AGL	Outstanding Open	Preliminary discussions have taken place on the strategy for the transition of the EPL from construction (CBI) to Operations. Likely that CBI will take on a form of operation EPL during commissioning before the site is handed over to AGL. Still being discussed with EPA about the best approach.
306	There will not be any gas venting during shutdown other than in an emergency.	Construction Operations	AGL	Outstanding Open	This will form part of the standard operating procedures for the NGSF.
7.13 Greenhouse Gas Emissions					
307	Design the site layout to reduce the extent of vegetation clearing required.	All	AGL	Compliance Closed	Clearing as per design. Clearing now completed
308	Incorporate initiatives focusing on energy efficiency in the Project design. This may include high-efficiency motors, variable speed drives and high-efficiency lighting (e.g., motion sensors or passive lighting).	All	AGL (WP)	Outstanding Open	Design to be checked.
309	Implement the AGL Climate Change Policy which is incorporated through the Health, Safety and Environment Management System including greenhouse abatement initiatives will be adopted for the Project.	Operations	AGL	Outstanding Open	OEMP drafted and under review

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
310	Establish measureable greenhouse gas emission reduction targets.	Operations	AGL	Outstanding Open	OEMP drafted and under review. One GHG initiative was the second Part 3A modification for the connection of the NGSF to Tomago Aluminium for the supply of "boil off" gas from the LNG storage tank. Alternatives to supplying gas to Tomago would have involved flaring or additional processing (energy consumption), which would have increased GHG from the site.
311	Maintain vehicles appropriately to maximise their fuel efficiency.	All	CBI	Compliance Open	AQMSP Appendix B Table 8-2 Vehicle, Plant and Equipment Management and Maintenance Vehicles maintained as per schedule – completed off site
312	In accordance with the Commonwealth National Greenhouse and Energy Reporting Act 2007, AGL will be required to report on greenhouse gas emissions, energy production and energy consumption. Greenhouse gas emissions will be monitored and reviewed on an annual basis.	All	CBI AGL	Compliance Open	Requirement to track fuel usage and electricity consumption of construction phase added to AQMSP. Fuel usage maintained in excel spreadsheet – no electricity from grid (generator only). OEMP drafted and under review
7.14 Hazard and Risk					
7.14.1 Risk Management					
313	Conduct a review of the hazard and risk assessment once detailed design and hazard and operability studies (HAZOPs) have been completed for the Project, this will ensure that the assumptions made in this hazard and risk assessment remain valid though conservative.	All	AGL	Compliance Closed	Letter to DP&I dated 19 June 2012 requesting approval to stage Fire Safety Study (FSS), Hazard and Operability Study (HAZOP), Final Hazard Analysis (FHA). CBI – HAZOP, FSS and FHA August 2012 based on final design

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
					Letter from DP&I dated 6 August 2012 approving staged approach with requirement the HAZOP for the second stage should cover the interaction with already installed equipment. 28-Nov-12: Submission of Phase 1 Fire Safety Study and Hazop Report to DP&I. 9-Sep-13: Submission of Phase 2 FSS, HAZOP, FHA to DoPI, FRNSW and RFS. 16-Sep-13: Phase 2 HAZOP approval by DoPI. 12-Sep-14: Submission of Phase 3 FSS, FHA, HAZOP report
314	Undertake an audit of the Safety (Health and Environment) Management System within twelve months of commissioning the gas plant. This audit will focus on the management of potential major hazards associated with the development and based on the DP&I Hazard Audit Guidelines.	Operations	AGL	Outstanding Open	12 months after operations commenced
315	Develop an emergency response plan that will coordinate procedures with the Tomago Aluminium Smelter, other adjacent industrial facilities and any local emergency planning groups, fire brigades, state and local police and appropriate government agencies. This plan will include: a) Contacts with state and local emergency response agencies; b) Scalable procedures for the prompt notification of appropriate local official and emergency response agencies, based on the level and severity of potential incidents;	All	CBI	Compliance Open	PRIMP – Rev 0 a) Section 3.0, Section 6.1.2 (Table 6-2) b) Section 2.1 c) Section 6.1.2 d) Draft emergency response plan for operations has been developed. e) Sirens ae located in the admin/control building, heater shelter and tank top platform.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
	c) Procedures for notifying businesses, residents and recreational users within areas of potential hazard; d) Evacuation routes/methods for residents, business and members of the public in the vicinity of the Project. Evacuation routes will include alternatives to the main access road; e) The locations of permanent sirens and other warning devices; f) Appointment of an emergency coordinator(s) to be available on site at all times; g) Plans for initial and continued training of plant operators and local responders, along with provisions for periodic emergency response drills by emergency personnel, emergency response agencies and federal, state and local officials.				f) Section 1.8. identification of designated emergency controller/coordinator in case of emergency added into responsibilities section g) Not applicable to this stage of works - operations
316	Undertake a security assessment to ensure arrangements are acceptable for the gas plant site as per the current requirements for critical infrastructure in NSW and under the NSW Regulations for Major Hazards Facilities.	All	AGL	Compliance Closed	Design and operations phase of project. Preliminary Hazard Analysis completed as part of EA. Security assessment has been undertaken and included in the Safety Case

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
317	Design the gas plant to ensure that any spills will drain into sumps, away from other plant items and infrastructure. Additional design features will also be incorporated to minimise the risk of cold metal brittle fracture and verify the adequacy of the design features during the HAZOP and safety integrity level (SIL) studies.	All	AGL	NA Open	Design to be confirmed
318	Install an automatic shutdown system for use in the event of a leak.	All	AGL	NA Open	Check of final design to be completed to confirm
319	Evaluate additional mitigation of vapour generated in the impoundment system, such as the installation of insulating concrete inside the LNG impoundment trenches and sump.	All	AGL	NA Open	Check of final design to be completed to confirm
320	Install an air quality monitoring or other early warning system inside the compressor building.	All	AGL	NA Open	Check of final design to be completed to confirm
321	Determine the requirement for lightning protection for the top of the tank during detailed design.	All	AGL	NA Open	Check of final design to be completed to confirm
322	Install an overfill and overpressure protection system for tanker loading.	All	AGL	NA Open	Check of final design to be completed to confirm
323	Consult with air transport stakeholders to determine any requirements for restricting airspace above the gas plant and aircraft warning lights or other warning devices.	All	AGL	Compliance Open	CASA and Dept of Defence have rejected request for restricting airspace above NGSF.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
324	Incorporate appropriate allowances in the Project design to ensure that multiple pipelines located in the same easement are separated by acceptable distances to ensure that radiant heat produced during an incident is not transferred to a neighbouring pipe.	All	AGL	NA Open	Check of final design to be completed to confirm
7.14.2 Safe Engineering Design					
325	The storage facility will be designed according to Australian and/or international standards to meet the required earthquake characteristics of the site.	Preconstruction	AGL	Compliance Closed	Designed to NFPA 59A as well as AS 1170. The Seismicity Study defines worst case scenarios which have been included into the design - setting high accelerations than the codes
326	AGL will continue to consult with all relevant agencies through the detailed design and Project operation phases.	Preconstruction	AGL	NA Open	Check of final design to be completed to confirm
327	Maximise separation distances to separate the most credible (though rare) leaks from ignition sources, physically isolate any fire, prevent its spread and minimise the risk to people and property.	Preconstruction	AGL	Compliance Closed	Plot plan has three zones: LNG tank; processing area; and non-process area. LNG tank is segregated into bunded area with large separation to process area; and non-process area is segregated for process area by pipe rack. Fire Monitor Accessibility Study demonstrates extent of potential gas jet fires and how to apply cooling water to mitigate escalation of fire event. Fire zones are kept within the plant boundary to minimise risk to people outside the plant.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
328	Minimise the inventory of LNG and of pressurised natural gas in process equipment.	Preconstruction	AGL	NA Open	Check of final design to be completed to confirm
329	Minimise pumping rates and pressure levels in Project components external to the storage tank.	Preconstruction	AGL	Compliance Open	Gas processing pressure is reduced from supply pressure. Operating pressure minimised to optimise refrigerant load.
330	Minimise vulnerability of equipment and processes through equipment selection and design.	Preconstruction	AGL	NA Open	Check of final design to be completed to confirm
331	Ensure maximum integrity of flammable material containment.	Preconstruction	AGL	Compliance Open	Loss of Containment is considered a worst case scenario. Multiple risk applications used to reduce to SFARP.
332	Minimise exposure to people by reducing process complexity and maintenance requirements.	Preconstruction	AGL	Compliance Open	Process is relatively simple and additional systems have not been added to increase complexity. High quality equipment has been purchased to minimise unplanned maintenance. Operation is periodic and maintenance can be undertaken with separate parts of the plant shutdown.
333	Ensure systems are available for rapid detection and prompt remote isolation of any leaks.	Preconstruction	AGL	Compliance Closed	Gas detectors and fire detectors are located around the processing areas where there is potential for gas leaks. Detectors will alarm in the Control Room. Confirmed fire will prompt isolation of gas systems.
334	Control all ignition sources.	Preconstruction	AGL	Compliance Open	AGL Operating Procedures preclude carrying ignition sources onto operating sites. Part of AGL inductions. Equipment in hydrocarbon areas covered.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
335	Minimise the opportunity for ignition sources in areas where hydrocarbon leaks are a possibility.	Preconstruction	AGL	Compliance Closed	Design to requirements for Hazardous areas. Prevents installation of ignition sources within hydrocarbon areas.
336	Provide passive and active fire protection systems for the gas plant site.	Preconstruction	AGL	Compliance Closed	Active fire protection provided via firewater pumps and ring main. Monitors used to cool equipment adjacent to fire to mitigate escalation. Automated water spray initiated on LPG storage tanks to mitigate BLEVE. Passive fire protection used on structures where a fire would cause escalation of the event.
337	Consider the implications of cold metal brittle failure in the design of the plant. The likelihood of a catastrophic cold metal brittle failure event should be rendered negligible through design.	Preconstruction	AGL	Compliance Closed	Areas where cryogenic temperature occur during operation are contained with materials which will not suffer embrittlement at the low temperatures. Areas where low temperatures can occur during abnormal operation, selection of materials has taken that into consideration.
338	Ensure that LNG transfer pipes which enter and leave the storage tank are positioned on the roof of the tank.	Preconstruction	AGL	Compliance Closed	There are no pipes that penetrate the walls of the LNG storage tank, which reduces the potential for LNG to leak from the tank. All penetrations are in tank roof.
339	Minimise the likelihood of over pressure, under pressure or overfill scenarios of the LNG storage tank by instigating appropriate measures in the design of the Project.	Preconstruction	AGL	Compliance Closed	Over-pressure and under-pressure events have been reviewed in the Layer of Protection Analysis (LOPA), which has reduced potential LOC SFARP.

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
7.14.3 Modifications to Management and Mitigation Measures for Hazard and Risk					
340	Advise the Office of Airspace Regulation of the expected start date of the operation of the facility six months prior to commencement of operation.	Preconstruction	AGL	Outstanding Open	Notification not required until six months prior to expected operation of facility – estimated to be approximately June 2015.
341	Reasonable measures will be taken to maintain security of the construction site to prevent third parties gaining unlawful access to the site. Measures will include secure fencing and lighting along the main access road and the pipeline corridor close to Old Punt Road.	Preconstruction	CBI	Compliance Open	Temporary site alongside TAC Access Road fenced with lighting. CBI Occupier of access road only during Civil Works Package. Fencing and lighting installed.
342	If any evidence of illegal dumping of wastes on the Project area is observed the dumped material will be removed immediately. If any liquid sludge or chemical waste is observed then appropriate sampling and monitoring will be implemented to determine whether any impact to groundwater has occurred.	Construction	CBI	Compliance Open	WMSP – Table 7-1 Gates to site locked after hours. Some incidences of waste material dumped outside site gates. Legacy waste encountered during initial clearing works. Material collected by waste contractor and disposed to landfill – refer ER Site Inspection reports
343	AGL will provide 'as constructed' drawings and details to RAAF.	Operations	AGL	Compliance Closed	2-Jul-14: As built details of the tank were provided to CASA and RAAF.
344	AGL will continue to consult with all relevant agencies through the detailed design and operation phases of the Project.	Operations	AGL	Compliance Open	Ongoing – AGL meets with NOW, PSC, HWC quarterly
345	An emergency plan will be prepared to comply with clause 174ZC of the Occupational Health and Safety Regulations 2001 (NSW).The emergency response plan will be compiled in accordance with DP&I guidance note HIPAP 1, Emergency Planning.	Operations	AGL	Outstanding Open	OEMP drafted and under review

Item	Commitment	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
346	The proposed emergency traffic arrangements will be reviewed and assessed to ensure compliance with the stated Emergency Vehicle Access Policy No.4.	Operations	AGL	Outstanding Open	NA - operations
347	Compliance with the regulations applicable to major hazard facilities and will continue to consult with WorkCover in order to obtain details of its requirements for inclusion in the site risk assessment and safety report.	Operations	AGL	Outstanding Open	NA - operations
348	AGL will prepare and submit the safety report to WorkCover six months prior to commissioning.	Operations	AGL	Compliance Open	20-Aug-14: Safety Case submitted to WorkCover for review.

Table A.3 Compliance Assessment –EPBC Approval 2010/5752

Item	Assessment Requirement	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
APPROVAL CONDITIONS					
1	To minimise the risk of construction and operational activities leading to the offsite movement of sediments or contaminants that could adversely affect the Kooragang Nature Reserve (now Hunter Wetlands National Park) wetland of international importance, the person taking the action must implement Conditions B 20 to B26 inclusive (dealing with Soils, Water and Hydrology), and B56 (dealing with a Construction Environmental Management Plan), imposed under the New South Wales Planning Assessment Commission conditions of approval dated 10 May 2012 for Application Number MP10_0133 under the NSW Environmental Planning & Assessment Act 1979	All	CBI Lucas Engineering Downer EDI PowerServe AGL	Compliance Open	Refer assessment of compliance against MCoA B20 – B26 and B56
2	To minimise adverse impacts during construction on listed threatened species and ecological communities, and in particular the New Holland Mouse (Pseudomys novaehollandiae), and Earp's Gum (Eucalyptus parramattensis subsp. decadens), the person taking the action must implement Conditions B 56 (dealing with a Construction Environmental Management Plan), imposed under the New South Wales Planning Assessment Commission conditions of approval dated 10 May 2012 for Application Number. MP10_0133.	Pre-clearing Construction	CBI AGL	Compliance Open	Refer assessment of compliance against MCoA B56

Item	Assessment Requirement	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
3	To offset the loss of approximately four (4) individuals of Earp's Gum (Eucalyptus parramattensis subsp. decadens) and approximately 15ha of potential habitat for the New Holland Mouse (Pseudomys novaehollandiae), the person taking the action must implement Condition C2 (dealing with a Biodiversity Offset Package), imposed under the New South Wales Planning Assessment Commission conditions of approval dated 10 May 2012 for Application Number MP10_0133.	Pre-commissioning	CBI AGL	Compliance Open	Refer to assessment of compliance against MCoA C2
4	The Biodiversity Offset Package required under conditions B13 and C2 imposed under the New South Wales Planning Assessment Commission conditions of approval dated 10 May Page 2 of 3 2012 for Application Number MP10_0133, must provide for the permanent offsite protection of at least 25ha of optimal habitat for the New Holland Mouse (Pseudomys novaehollandiae) and permanent offsite protection of at least 60 individual Earp's Gum (Eucalyptus parramattensis subsp. decadens) trees.	Pre-clearing Pre commissioning	AGL	Compliance Open	Offset Report 60 Earp's gums to be established in Hunter Botanic Gardens in an area of 2.9 ha New Holland Mouse - the offset sites provide permanent protection of at least 25 ha of preferred habitat and approximately 80 ha of sub-optimal habitat, which may become more suitable for this species with appropriate fire management as outlined in the Conservation Agreements for the offset sites. The development of the Gas Storage facility removed approximately 12 ha of sub-optimal habitat for this species.
5	Within 10 days after the commencement of the action, the person taking the action must advise the Department in writing of the actual date of commencement.	Commencement of Construction	AGL	Compliance Closed	Department was notified by AGL in writing – letter dated 27 August 2012. This was the commencement date of the project and is therefore within 10 days as required.

Item	Assessment Requirement	Stage/timing	Responsibility	Compliance Status	Reference/ Comment
6	The person taking the action must maintain accurate records substantiating all activities associated with or relevant to these conditions of approval, including measures taken to implement management plans required as part of the approval, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.	All stages	AGL CBI	Compliance Open	Document Control is included in Section 4.5 of the CEMP. All full audit reports completed to date are on the project website accessible to Department if required.
7	Within 3 months of every 12 month anniversary of the commencement of the action, the person taking the action must publish a report on their website addressing compliance with the conditions of this approval over the previous 12 months, including implementation of any management plans as specified in the conditions. Non-compliance with any of the conditions of this approval must be reported to the Department at the same time as the compliance report is published.	One year anniversary of commencement	AGL	Compliance Open	Letters to Department included on project website: Returns dated 27 November 2013 and 17 July 2014 which is within period as required (commencement of construction – 27 August 2012)

Annex B

Monitoring Results

Table B1.1 Hunter River Area Groundwater Sampling Results – March 2014

Analyte	Units	LOR	Adopted Groundwater Thresholds	March 2014 Sampling Results Range
General Parameters				
Field pH	pH unit	0.1	5.0 to 8.0	6.6 to 7.0
Electrical Conductivity	µS/cm	1	15000	1690 to 3900
Total Dissolved Solids	mg/L	5	7000	1020 to 2350
Total Suspended Solids	mg/L	5	9000	53 to 1170
Cations				
Calcium	mg/L	1	N/A	25 to 189
Magnesium	mg/L	1	N/A	30 to 145
Sodium	mg/L	1	N/A	14 to 27
Potassium	mg/L	1	N/A	236 to 518
Anions				
Total Alkalinity as CaCO3	mg/L	1	N/A	271 to 613
Chloride	mg/L	1	N/A	273 to 841
Fluoride	mg/L	0.1	1.5	0.2 to 1.1
Sulfate	mg/L	1	N/A	<1 to 466
Dissolved Metals				
Arsenic	mg/L	0.001	0.02	<0.001 to 0.019
Cadmium	mg/L	0.0001	0.0055	<0.0001 to 0.0003
Chromium	mg/L	0.001	0.05	<0.001 to 0.003
Copper	mg/L	0.001	0.02	<0.001 to 0.003
Lead	mg/L	0.001	0.01	<0.001 to 0.002
Nickel	mg/L	0.001	0.07	<0.001 to 0.008
Zinc	mg/L	0.005	0.08	<0.005 to 0.041
Iron	mg/L	0.05	35	0.26 to 46.3
Nutrients				
Nitrate as N	mg/L	0.01	1	<0.01 to 0.02
Nitrite as N	mg/L	0.01	3	<0.01
Nitrite + Nitrate as N	mg/L	0.01	4	<0.01 to 0.02
Total Kjeldahl Nitrogen as N	mg/L	0.1	15	0.4 to 6.7
Total Nitrogen as N	mg/L	0.1	15	0.4 to 6.7
Total Phosphorus as P	mg/L	0.01	10	0.27 to 1.22
Total Petroleum Hydrocarbons				
C6 - C9 Fraction	µg/L	20	<20	<20
C10 - C14 Post Silica Gel Clean Up	µg/L	50	<50	<50
C15 - C28 Post Silica Gel Clean Up	µg/L	100	<100	<100
C29 - C36 Post Silica Gel Clean Up	µg/L	50	<50	<50
C10 - C36 Post Silica Gel Clean Up (sum)	µg/L	50	<50	<50

Analyte	Units	LOR	Adopted Groundwater Thresholds	March 2014 Sampling Results Range
BTEX				
Benzene	µg/L	1	<1	<1
Toluene	µg/L	2	<2	<2
Ethylbenzene	µg/L	2	<2	<2
meta- & para-Xylene	µg/L	2	<2	<2
ortho-Xylene	µg/L	2	<2	<2

Notes:

1. ANZECC (2000) Marine Water Ecosystem Trigger Values for 95% Species Protection
2. Range of values for NSW estuaries
3. Chromium guidelines are for Chromium VI
4. ANZECC Indicative Interim Working Level (IIWL) – Low Reliability Trigger Values
5. ANZECC (2000) Fresh Water Ecosystem Trigger Values for 95% Species Protection (no marine trigger value)
   LOR - laboratory limit of reporting

Value	Within 1.1 times threshold concentrations
Value	Greater than 1.1 and up to 2.5 times threshold concentrations
Value	Greater than 2.5 and up to10 times threshold concentrations
Value	Greater than 10 times threshold concentrations

Table B1.2 Hunter River Area Groundwater Sampling Results – June 2014

Analyte	Units	LOR	Revised Adopted Groundwater Thresholds (2011/13)	June 2014 Sampling Results Range
General Parameters				
Field pH	pH unit	0.1	5.0 to 8.0	5.7 to 7.8
Electrical Conductivity	µS/cm	1	15000	348 to 3930
Total Dissolved Solids	mg/L	5	9000	184 to 2030
Total Suspended Solids (	mg/L	5	N/A	80 to 2020
Cations				
Calcium	mg/L	1	N/A	24 to 120
Magnesium	mg/L	1	N/A	15 to 160
Sodium	mg/L	1	N/A	3 to 32
Potassium	mg/L	1	N/A	32 to 655
Anions				
Total Alkalinity as CaCO3	mg/L	1	N/A	84 to 697
Chloride	mg/L	1	N/A	27 to 733
Fluoride	mg/L	0.1	2.0	0.3 to 1.2
Sulfate	mg/L	1	N/A	<1 to 261
Dissolved Metals				
Arsenic	mg/L	0.001	0.04	<0.001 to 0.02
Cadmium	mg/L	0.0001	0.0055	<0.0001
Chromium	mg/L	0.001	0.0044	<0.001 to 0.002
Copper	mg/L	0.001	0.02	<0.001 to 0.004
Lead	mg/L	0.001	0.01	<0.001
Nickel	mg/L	0.001	0.07	<0.001 to 0.008
Zinc	mg/L	0.005	0.2	0.009 to 0.02
Iron	mg/L	0.05	70	0.15 to 37
Nutrients				
Nitrate as N	mg/L	0.01	1.5	<0.01 to 0.62
Nitrite as N	mg/L	0.01	1.5	<0.01
Nitrite (Total Oxidised)	mg/L	0.01	3	<0.01 to 0.62
Total Kjeldahl Nitrogen as N	mg/L	0.1	25	0.6 to 7.9
Total Nitrogen as N	mg/L	0.1	25	1.2 to 7.9
Total Phosphorus as P	mg/L	0.01	10	0.3 to 1.74
Total Petroleum Hydrocarbons				
C6 - C9 Fraction	µg/L	20	<20	<20
C10 - C14 Post Silica Gel Clean Up	µg/L	50	<50	<50
C15 - C28 Post Silica Gel Clean Up	µg/L	100	<100	<100
C29 - C36 Post Silica Gel Clean Up	µg/L	50	<50	<50
C10 - C36 Post Silica Gel Clean Up (sum)	µg/L	50	<50	<50

Analyte	Units	LOR	Revised Adopted Groundwater Thresholds (2011/13)	June 2014 Sampling Results Range
BTEX				
Benzene	µg/L	1	<1	<1
Toluene	µg/L	2	3	<2 to 3
Ethylbenzene	µg/L	2	<2	<2
meta- & para-Xylene	µg/L	2	<2	<2
ortho-Xylene	µg/L	2	<2	<2
Total Xylene	µg/L	2	<2	<2

Notes:

1. ANZECC (2000) Marine Water Ecosystem Trigger Values for 95% Species Protection
2. Range of values for NSW estuaries
3. Chromium guidelines are for Chromium VI
4. ANZECC Indicative Interim Working Level (IIWL) – Low Reliability Trigger Values
5. ANZECC (2000) Fresh Water Ecosystem Trigger Values for 95% Species Protection (no marine trigger value)

LOR - laboratory limit of reporting

Value	Within 1.1 times threshold concentrations
Value	Greater than 1.1 and up to 2.5 times threshold concentrations
Value	Greater than 2.5 and up to10 times threshold concentrations
Value	Greater than 10 times threshold concentrations

Table B1.3 Gas Storage Site Ground and Surface Water Monitoring Results – March 2014

Analyte	Units	LOR	Adopted Groundwater Thresholds	March 2014 Groundwater Sampling Results Range	Adopted ISBL Surface Water Thresholds	March 2014 ISBL Surface Water Sampling Results Range	Adopted OSBL Surface Water Thresholds	March 2014 OSBL Surface Water Sampling Results (SW4)
General Parameters								
Field pH	pH unit	0.1	3.0 to 7.0	4.8 to 5.3	3.0 to 8.0	5.0 to 6.0	4.5 to 8.0	8.4
Electrical	µS/cm	1	1000	82 to 306	1000	84 to 195	1600	418
Total Dissolved Solids	mg/L	10	600	49 to 191	600	135 to 175	850	225
Suspended Solids (SS)	mg/L	5	5000	15 to 2960	1000	47 to 52	1000	28
Cations								
Calcium	mg/L	1	N/A	<1 to 7	N/A	2	N/A	20
Magnesium	mg/L	1	N/A	<1 to 6	N/A	2 to 3	N/A	8
Sodium	mg/L	1	N/A	9 to 34	N/A	1 to 5	N/A	4
Potassium	mg/L	1	N/A	<1 to 4	N/A	13 to 28	N/A	46
Anions								
Total Alkalinity as	mg/L	1	N/A	<1 to 6	N/A	<1 to 15	N/A	71
Chloride	mg/L	1	N/A	6 to 80	N/A	7 to 48	N/A	57
Fluoride	mg/L	0.1	1.5	<0.1 to 0.1	1.5	0.4 to 0.5	3.5	1.7
Sulfate	mg/L	1	500	<1 to 33	500	10 to 12	500	27
Dissolved Metals								
Arsenic	mg/L	0.001	0.01	<0.001 to 0.002	N/A	NT	N/A	NT
Cadmium	mg/L	0.0001	0.002	<0.0001	N/A	NT	N/A	NT
Chromium	mg/L	0.001	0.05	<0.001 to 0.003	N/A	NT	N/A	NT
Copper	mg/L	0.001	0.02	<0.001 to 0.003	N/A	NT	N/A	NT
Lead	mg/L	0.001	0.02	<0.001	N/A	NT	N/A	NT

Analyte	Units	LOR	Adopted Groundwater Thresholds	March 2014 Groundwater Sampling Results Range	Adopted ISBL Surface Water Thresholds	March 2014 ISBL Surface Water Sampling Results Range	Adopted OSBL Surface Water Thresholds	March 2014 OSBL Surface Water Sampling Results (SW4)
Nickel	mg/L	0.001	0.02	<0.001 to 0.004	N/A	NT	N/A	NT
Zinc	mg/L	0.005	0.2	0.014 to 0.032	N/A	NT	N/A	NT
Iron	mg/L	0.05	5	0.26 to 6.4	N/A	NT	N/A	NT
Total Metals								
Arsenic	mg/L	0.001	N/A	NT	0.01	<0.001 to 0.003	0.01	<0.001
Cadmium	mg/L	0.0001	N/A	NT	0.002	<0.0001	0.002	<0.0001
Chromium	mg/L	0.001	N/A	NT	0.05	0.002 to 0.01	0.05	0.003
Copper	mg/L	0.001	N/A	NT	0.02	0.001 to 0.005	0.02	0.002
Lead	mg/L	0.001	N/A	NT	0.01	0.001 to 0.003	0.01	0.001
Nickel	mg/L	0.001	N/A	NT	0.02	0.002 to 0.004	0.02	0.002
Zinc	mg/L	0.005	N/A	NT	0.5	0.032 to 0.046	0.5	0.018
Iron	mg/L	0.05	N/A	NT	16	3.13 to 4.36	19	1.89
Nutrients								
Nitrate as N	mg/L	0.01	1	<0.01 to 0.16	3	0.02 to 0.52	3	0.02
Nitrite as N	mg/L	0.01	3	<0.01	3	<0.01	3	<0.01
Nitrite + Nitrate as N	mg/L	0.01	4	<0.01 to 0.16	6	0.02 to 0.52	6	0.02
Total Kjeldahl	mg/L	0.1	4	0.2 to 1.8	9	1.1 to 1.2	9	0.7
Total Nitrogen as N	mg/L	0.1	4	0.2 to 1.9	9	1.1 to 1.7	9	0.7
Total Phosphorus as P	mg/L	0.01	2	<0.01 to 2.03	0.5	0.06 to 0.14	0.5	0.04
Total Petroleum								
C6 - C9	µg/L	20	<20	<20	<20	<20	<20	<20
C10 - C14 Post Silica	µg/L	50	<50	<50	<50	<50	<50	<50
C15 - C28 Post Silica	µg/L	100	<100	<100	<100	<100	<100	<100

Analyte	Units	LOR	Adopted Groundwater Thresholds	March 2014 Groundwater Sampling Results Range	Adopted ISBL Surface Water Thresholds	March 2014 ISBL Surface Water Sampling Results Range	Adopted OSBL Surface Water Thresholds	March 2014 OSBL Surface Water Sampling Results (SW4)
C29 - C36 Post Silica	µg/L	50	<50	<50	<50	<50	<50	<50
C10 - C36 Post Silica	µg/L	50	<50	<50	<50	<50	<50	<50
BTEX								
Benzene	µg/L	1	<1	<1	<1	<1	<1	<1
Toluene	µg/L	2	<2	<2	<2	<2	<2	<2
Ethylbenzene	µg/L	2	<2	<2	<2	<2	<2	<2
meta- & para-Xylene	µg/L	2	<2	<2	<2	<2	<2	<2
ortho-Xylene	µg/L	2	<2	<2	<2	<2	<2	<2
Coliforms								
Total Coliforms	cfu/100ml	-	N/A	<100 to 1986	N/A	NT	N/A	NT
Faecal coliforms	cfu/100ml	-	N/A	Est <0* to <63**	N/A	NT	N/A	NT
E. Coli	MPN/100	-	0	Est <0* to <20***	N/A	NT	N/A	NT

LOR means laboratory limit of reporting N/A means not applicable – no guideline available NT means not tested

* MW5 Thermotolerant Coliform and E.coli results are estimated due to the high number of non-target colonies present. Result may be underestimated.

**MW15 Thermotolerant Coliform and E.coli results are reported as <63 CFU/100ml due to the presence of particulates blocking the membrane for the filtration test.

***MW15 E.coli re-test results are reported as <20 MPN/100ml due to the dilution conducted for the Colilert biochemical substrate method (5ml sample tested rather than 100ml). No E.coli was detected by Colilert method therefore no faecal contamination identified.

Value	Within 1.1 times threshold concentrations
Value	Greater than 1.1 and up to 2.5 times threshold concentrations
Value	Greater than 2.5 and up to10 times threshold concentrations
Value	Greater than 10 times threshold concentrations

Table B1.4 Gas Storage Site Ground and Surface Water Monitoring Results – June 2014

Analyte	Units	LOR	Adopted Groundwater Thresholds	June 2014 Groundwater Sampling Results Range	Adopted ISBL Surface Water Thresholds	June 2014 ISBL Surface Water Sampling Results Range	Adopted OSBL Surface Water Thresholds	June 2014 OSBL Surface Water Sampling Results Range
General Parameters								
Field pH	pH unit	0.1	3.0 to 7.0	4.4 to 4.9	3.0 to 8.0	4.5 to 8.3	4.5 to 8.0	7.3 to 8.0
Electrical Conductivity @ 25℃	µS/cm	1	1000	113 to 306	1000	73 to 214	1600	855 to 1060
Total Dissolved Solids	mg/L	10	600	82 to 242	600	73 to 224	850	414 to 538
Suspended Solids (SS)	mg/L	5	N/A	58 to 4500	1000	<5 to 14	1000	27 to 49
Cations								
Calcium	mg/L	1	N/A	<1 to 10	N/A	<1 to 8	N/A	13 to 39
Magnesium	mg/L	1	N/A	2 to 8	N/A	1 to 4	N/A	16 to 18
Potassium	mg/L	1	N/A	<1 to 8	N/A	<1 to 5	N/A	2 to 5
Sodium	mg/L	1	N/A	15 to 36	N/A	9 to 27	N/A	122 to 154
Anions								
Total Alkalinity as	mg/L	1	N/A	<1 to 14	N/A	<1 to 23	N/A	22 to 61
Chloride	mg/L	1	N/A	9 to 72	N/A	9 to 33	N/A	222 to 264
Fluoride	mg/L	0.1	1.5	<0.1 to 0.2	1.5	0.5 to 0.8	3.5	2.2 to 2.3
Sulfate	mg/L	1	500	<1 to 41	500	6 to 27	500	31 to 32
Nutrients								
Nitrate as N	mg/L	0.01	1	<0.01 to 0.92	3	<0.01 to 6.85	3	0.12 to 2.16
Nitrite as N	mg/L	0.01	3	<0.01	3	<0.01	3	<0.01 to 0.01
Nitrite + Nitrate as N	mg/L	0.01	4	<0.01 to 0.92	6	<0.01 to 6.85	6	0.13 to 2.16
Total Nitrogen as N	mg/L	0.1	4	0.2 to 4	9	0.4 to 1.4	9	1.37 to 3.7
Total Kjeldahl	mg/L	0.1	4	0.1 to 3.9	9	0.4 to 8.2	9	1.5 to 1.6
Total Phosphorus as P	mg/L	0.01	2	<0.01 to 3.03	0.5	0.01 to 0.09	0.5	0.05 to 0.06

Analyte	Units	LOR	Adopted Groundwater Thresholds	June 2014 Groundwater Sampling Results Range	Adopted ISBL Surface Water Thresholds	June 2014 ISBL Surface Water Sampling Results Range	Adopted OSBL Surface Water Thresholds	June 2014 OSBL Surface Water Sampling Results Range
Dissolved Metals								
Arsenic	mg/L	0.001	0.01	<0.001 to 0.001	N/A	NT	N/A	NT
Cadmium	mg/L	0.0001	0.002	<0.0001	N/A	NT	N/A	NT
Chromium	mg/L	0.001	0.05	<0.001 to 0.004	N/A	NT	N/A	NT
Copper	mg/L	0.001	0.02	<0.001 to 0.004	N/A	NT	N/A	NT
Lead	mg/L	0.001	0.02	<0.001	N/A	NT	N/A	NT
Nickel	mg/L	0.001	0.02	<0.001 to 0.002	N/A	NT	N/A	NT
Zinc	mg/L	0.005	0.2	0.01 to 0.07	N/A	NT	N/A	NT
Iron	mg/L	0.05	5	0.2 to 6.74	N/A	NT	N/A	NT
Total Metals								
Arsenic	mg/L	0.001	N/A	NT	0.01	<0.001 to 0.004	0.01	0.002
Cadmium	mg/L	0.0001	N/A	NT	0.002	<0.0001	0.002	<0.0001
Chromium	mg/L	0.001	N/A	NT	0.05	0.001 to 0.021	0.05	0.004
Copper	mg/L	0.001	N/A	NT	0.02	0.002 to 0.006	0.02	0.002 to 0.003
Lead	mg/L	0.001	N/A	NT	0.01	<0.001 to 0.005	0.01	0.003 to 0.004
Nickel	mg/L	0.001	N/A	NT	0.02	0.002 to 0.007	0.02	0.006 to 0.008
Zinc	mg/L	0.005	N/A	NT	0.5	0.022 to 0.06	0.5	0.033 to 1.87
Iron	mg/L	0.05	N/A	NT	16	0.9 to 9.9	19	6.53 to 15.6
Total Petroleum Hydrocarbons								
C6 - C9	µg/L	20	<20	<20	<20	<20	<20	<20
C10 - C14 Post Silica	µg/L	50	<50	<50	<50	<50	<50	<50
C15 - C28 Post Silica	µg/L	100	<100	<100	<100	<100	<100	200 to 300
C29 - C36 Post Silica	µg/L	50	<50	<50	<50	<50	<50	150 to 180
C10 - C36 Post Silica	µg/L	50	<50	<50	<50	<50	<50	380 to 450

Analyte	Units	LOR	Adopted Groundwater Thresholds	June 2014 Groundwater Sampling Results Range	Adopted ISBL Surface Water Thresholds	June 2014 ISBL Surface Water Sampling Results Range	Adopted OSBL Surface Water Thresholds	June 2014 OSBL Surface Water Sampling Results Range
BTEX								
Benzene	µg/L	1	<1	<1	<1	<1	<1	<1
Toluene	µg/L	2	<2	<2	<2	<2 to 9	<2	<2
Ethylbenzene	µg/L	2	<2	<2	<2	<2	<2	<2
meta- & para-Xylene	µg/L	2	<2	<2	<2	<2	<2	<2
ortho-Xylene	µg/L	2	<2	<2	<2	<2	<2	<2
Xylene Total	µg/L	2	<2	<2	<2	<2	<2	<2
Coliforms								
Total Coliforms	cfu/100ml	-	-	<1	N/A	NT	N/A	NT
Faecal coliforms	cfu/100ml	-	-	0 to <9	N/A	NT	N/A	NT
E. Coli	cfu/100ml	-	-	<1*	N/A	NT	N/A	NT

LOR means laboratory limit of reporting

N/A means not applicable – no guideline available

NT means not tested

Within 1.1 times threshold concentrations

Greater than 1.1 and up to 2.5 times threshold

Greater than 2.5 and up to 10 times threshold

Greater than 10 times threshold concentration

*No E.coli was detected by Colilert method therefore no faecal contamination identified

Table B1.5 CBI Attended Noise Monitoring Results March 2014 to August 2014

Date	Time	Duration (min)	Location	Distance from Construction Activities (m)	Predicted LAeq	LAeq	LAmax	Lmin	L10	L90	Dominant Noises
11-Mar-2014	6:59PM	15	Site Compound	250	53	54.5	66.2	53.8	52.5	55.1	Air conditioner, generator, moderate wind
19-Mar-2014	8:37PM	5	Site Compound	250	53	60.2	85.1	52.8	49.4	58.9	Air conditioner, generator, moderate wind
1-Apr-2014	9:31PM	15	Site Compound	250	53	50.7	72.5	48.6	47.6	52.0	Air conditioner, generator
2-Apr-2014	8:49 AM	15	Site boundary	25	73	51.3	65.0	47.3	45.4	54.3	Generator, concrete truck, hammering, grinding.
2-Apr-2014	9:20 AM	15	HRBG boundary (R1)	500	47	40.0	58.4	35.9	33.5	42.5	Bird calls, freeway noise.
8-Apr-2014	10:36PM	15	Site Compound	250	53	63.2	85.3	47.2	45.7	58.9	Air conditioner, generator
15-Apr-2014	11:13PM	15	Site Compound	250	53	50.0	64.8	46.7	51.3	48.3	Air conditioner, generator
23-Apr-2014	12:09AM	15	Site Compound	250	53	50.8	65.1	48.4	47.1	50.6	Air conditioner, generator
29-Apr-2014	2:41 PM	15	Site boundary	25	73	56.9	69.1	51.8	47.8	59.2	Reversing alarm (quacker), engine noise from plant, whistle from dogman crane lift at substation, frogs.
29-Apr-2014	3:10 PM	15	HRBG boundary (R1)	500	47	53.6	74.2	35.2	31.6	52.9	Bird calls, freeway noise, fighter jet low fly over around 13 minutes into monitoring (very loud), no construction noise noticeable.
29-Apr-2014	7:30PM	15	Site Compound	250	53	50.8	74.5	49.4	48.4	50.9	Air conditioner, generator, crib room activity
2-May-2014	2:58 PM	15	Site Compound (DAY)	25	73	62.4	76.3	53.6	65.1	55.9	Forklift pass by, generator, engine noise

Date	Time	Duration (min)	Location	Distance from Construction Activities (m)	Predicted LAeq	LAeq	LAmax	Lmin	L10	L90	Dominant Noises
14-May-2014	12:56 AM	15	Site Compound	25	73	64.1	84.1	48.3	63.7	49.3	Plant drive by, air conditioner, generator
21-May-2014	6:38 PM	15	Site Compound	25	73	52.3	64.7	45.8	55.4	47.5	Plant and equipment, crib room noise
27-May-2014	7:31pm	15	Site Compound	25	73	56.2	66.3	52.2	57.8	54.3	Plant, hammering steel on firewater tank
4-Jun-2014	9:53 AM	15	Site boundary	25	79	52.9	61.9	49.6	54.4	51.4	Drill rig operating at substation.
4-Jun-2014	10:22 AM	15	HRBG boundary (R1)	500	53	46.2	60.5	39.8	47.8	42.4	Freeway noise, bird calls, helicopter flyover, truck drive by on dirt road.
18-Jun-2014	12:52am	15	Site Compound	25	73	50.8	64.7	48.6	51.6	49.9	Plant drive by monitor
1-Jul-2014	11:15 AM	15	Site boundary	100	61	51.1	59.3	47.8	52.6	49.7	Grinding, impact wrench, reversing alarms, engine noise, leaves on trees rustling in the breeze.
1-Jul-2014	11:44 AM	15	HRBG boundary (R1)	500	53	45.3	53.8	41.9	46.9	43.5	Freeway noise, bird calls, leaves rustling in the breeze. Cannot hear construction noise.
1-Jul-2014	10:05 PM	15	Site Compound	100	61	53.3	63.5	51.2	54.0	52.2	Plant noise, grinding, wind gust
10-Jul-2014	12:52 AM	15	Site Compound	100	61	50.2	57.8	48.0	51.0	49.5	Hammering steel, plant drive by, wind
22-Jul-2014	5:41 PM	15	Site Compound	250	53	50.3	63.8	47.9	51.0	49.2	Hanging and welding steel plate inside tank

Date	Time	Duration (min)	Location	Distance from Construction Activities (m)	Predicted LAeq	LAeq	LAmax	Lmin	L10	L90	Dominant Noises
30-Jul-2014	11:05 AM	15	Site boundary	25	79	57.4	80.8	47.8	59.6	50.4	Welding, dust suppression, hammering steel reversing alarm, forklift delivery near monitor at 11:18am
30-Jul-2014	11:37 AM	15	HRBG boundary (R1)	500	53	48.0	57.9	43.2	50.4	45.5	Gusting wind, bird calls, freeway noise. Cannot hear construction noise.
30-Jul-2014	5:18 PM	15	Site Compound	25	73	64.2	80.4	50.8	67.1	53.0	Hanging and welding steel plate inside tank
5-Aug-2014	9:26 PM	15	Site Compound	25	73	51.2	62.8	47.4	52.2	49.3	Hammering steel, grinding, reversing alarm
13-Aug-2014	6:41 PM	15	Site Compound	25	73	49.9	73.2	46.2	50.9	48.1	Reversing alarm, hammering steel, grinding
25-Aug-2014	10:06 AM	15	Site boundary	25	79	54.1	63.6	48.3	56.5	51.0	Excavator and backhoe engine noise from substation road work. Hammering steel on firewater tank.
25-Aug-2014	10:39 AM	15	HRBG boundary (R1)	500	53	44.3	65.2	36.4	43.5	38.6	Bird calls, freeway noise, slight breeze rustling leaves. 10:44am helicopter fly over south on monitoring site.
25-Aug-2014	5:44 PM	15	Site Compound	250	53	53.3	81.4	50.9	52.9	51.9	Generator, air conditioner

Table B1.6 CBI Surface Water Monitoring Results March 2014 to August 2014

Description			Guidelines		Groundwater		Sample Results		Sample Results			Results	Sample Results	Sample Results	Sample Results
Analyte	**Units**	**LOR**	**Ecosystem Guidelines** [1]	**Drinking Water Guidelines** [2]	**Baseline Groundwater Results Range** Jul-Sep 2013	**Adopted Groundwater Thresholds** Jul-Sep 2013	**HP1** 25 Feb 2014	**HP3** 25 Feb 2014	**HP1** 2 May 2014	**HP2** 2 May 2014	**HP3** 13 May 2014	**HP3** 26 June 2014 AGL Post Hydrotest	**HP1** 28 July 2014 Holding Pond	**HP1** 21 August 2014 Holding Pond	**HP2** 27 August 2014 Holding Pond
General Parameters															
Field pH	pH unit	0.1	6.5 to 8.0 [3]	6.5-8.5 [6]	3.4 to 6.6	3.0 to 7.0	7.56	6.89	8.26	8.21	6.93	NT	7.76	8.04	8.02
Electrical Conductivity @ 25°C	µS/c m	1	N/A	N/A	102 to 195	1000	161	107	179	155	87	211	193	134	106
Total Dissolved Solids @180°C	mg/L	10	N/A	600 [6]	86 to 420	600	99	142	76	85	196	117	108	70	263
Suspended Solids (SS)	mg/L	5	N/A	N/A	<5 to 4780	5000	<5	10	<5	42	17	9	7	10	856
Cations															
Calcium	mg/L	1	N/A	N/A	<1 to 5	N/A	12	4	12	10	2	8	18	8	6
Magnesium	mg/L	1	N/A	N/A	1 to 6	N/A	2	2	<1	<1	1	4	1	<1	<1
Sodium	mg/L	1	N/A	N/A	12 to 28	N/A	14	14	13	15	14	27	10	7	13
Potassium	mg/L	1	N/A	N/A	<1 to 3	N/A	7	2	9	2	5	3	7	4	<1
Anions															
Total Alkalinity as CaCO3	mg/L	1	N/A	N/A	<1 to 8	N/A	<1	<1	46	44	17	16	44	31	34
Chloride	mg/L	1	N/A	N/A	18 to 40	N/A	11	12	21	8	7	31	8	8	7
Fluoride	mg/L	0.1	N/A	1.5	<0.1 to 0.2	1.5	0.6	0.5	0.8	0.7	0.4	0.7	1.5	0.9	0.6
Sulfate	mg/L	1	N/A	500	<1 to 29	500	20	14	19	17	2	23	29	19	19
Dissolved Metals (Groundw ater Infiltration)							filtered	filtered	filtered	filtered	filtered	filtered	Filtered	Filtered	Filtered
Arsenic	mg/L	0.001	0.013	0.007	<0.001 to 0.002	0.01	<0.001	0.002	<0.001	<0.001	0.002	NT	<0.001	<0.001	<0.001
Cadmium	mg/L	0.0001	0.0002	0.002	<0.0001 to 0.0001	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NT	<0.0001	<0.0001	<0.0001
Chromium	mg/L	0.001	0.001 [4]	0.05 [4]	<0.001 to 0.002	0.05	0.003	0.005	0.004	0.001	0.015	NT	0.004	0.003	0.001
Copper	mg/L	0.001	0.0014	2	<0.001 to 0.006	0.02	0.003	0.006	0.002	0.001	0.003	NT	<0.001	0.001	0.001
Lead	mg/L	0.001	0.0034	0.01	<0.001 to 0.011	0.02	0.001	0.003	<0.001	<0.001	0.004	NT	<0.001	<0.001	0.002
Nickel	mg/L	0.001	0.011	0.02	0.001 to 0.007	0.02	<0.001	0.003	<0.001	<0.001	0.003	NT	0.003	0.001	<0.001
Zinc	mg/L	0.005	0.008	3 [6]	<0.005 to 0.113	0.2	0.048	0.035	0.18	0.015	0.08	NT	0.507	0.329	0.02
Iron	mg/L	0.05	0.3 [5]	0.3 [6]	<0.05 to 2.24	5	0.19	3.42	0.07	<0.05	3.24	0.72	0.13	0.07	0.33
Total Metals (Surface Water Discharge)												not filtered			
Arsenic	mg/L	0.001	0.013	0.007								0.002	NT	NT	NT
Cadmium	mg/L	0.0001	0.0002	0.002								<0.0001	NT	NT	NT
Chromium	mg/L	0.001	0.001 [4]	0.05 [4]								0.006	NT	NT	NT
Copper	mg/L	0.001	0.0014	2								0.002	NT	NT	NT
Nickel	mg/L	0.001	0.011	0.02								0.001	NT	NT	NT
Lead	mg/L	0.001	0.0034	0.01								0.002	NT	NT	NT
Zinc	mg/L	0.005	0.008	3 [6]								0.022	NT	NT	NT
Iron	mg/L	0.05	0.3 [5]	0.3 [6]								7.25	NT	NT	NT
Nutrients															
Nitrite as N	mg/L	0.01	N/A	3	<0.01	3	<0.01	<0.01	0.01	0.02	<0.01	NT	0.07	0.02	0.01
Nitrate as N	mg/L	0.01	0.7	50	<0.01 to 0.53	1	0.15	<0.01	0.07	0.21	<0.01	<0.01	0.5	0.08	0.17
Nitrite + Nitrate as N	mg/L	0.01	N/A	N/A	<0.01 to 0.53	4	0.15	<0.01	0.08	0.23	<0.01	<0.01	0.57	0.1	0.18
Total Kjeldahl Nitrogen as N	mg/L	0.1	N/A	N/A	<0.1 to 1.2	4	0.7	0.5	0.5	0.3	0.6	0.4	0.6	0.3	<1.0
Total Nitrogen as N	mg/L	0.1	0.5 [3]	N/A	<0.1 to 1.3	4	0.8	0.5	0.6	0.5	0.6	0.4	1.2	0.4	<1.0
Total Phosphorus as P	mg/L	0.01	0.05 [3]	N/A	<0.01 to 1.65	2	0.01	0.07	0.04	0.08	0.05	0.03	0.04	0.02	0.47
Total Petroleum Hydrocarbons															
C6-C9 Fraction	µg/L	20	N/A	N/A	<20 to 20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
C10-C14 Fraction	µg/L	50	N/A	N/A	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15-C28 Fraction	µg/L	100	N/A	N/A	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29-C36 Fraction	µg/L	50	N/A	N/A	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C10-C36 Fraction (sum)	µg/L	50	N/A	N/A	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
BTEX															
Benzene	µg/L	1	950	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	µg/L	2	180 [5]	800	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Ethylbenzene	µg/L	2	80 [5]	N/A	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
meta- & para-Xylene	µg/L	2	N/A	N/A	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
ortho-Xylene	µg/L	2	350	N/A	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Total Xylenes	µg/L	2	N/A	N/A	<2	N/A	<2	<2	<2	<2	<2	<2	<2	<2	<2
PAH															
Naphthalene	µg/L	5	16				<5	<5	<5	<5	<5	<5	<5	NT	NT

NOTES:

NT means not tested
TBC means to be confirmed following further baseline data collection
N/A means not applicable – no guideline available
Dissolved metals sample 40 micron filtered in the field
Jul-Sept 2013 Results from Coffey Geotechnics Report GEOTLCOV24054AC-AJ, 1 Nov 2013

HP1 - Process Area Holding Pond (Sump)
HP2 - LNG Tank Holding Pond (Sump)
HP3 - Wetlands Holding Pond (Largest)

Legend for comparison to threshold concentrations

Within 1.1 times threshold concentrations
Greater than 1.1 and up to 2.5 times threshold concentrations
Greater than 2.5 and up to10 times threshold concentrations
Greater than 10 times threshold concentrations

Table B1.7 PowerServe/Downer EDI Surface Water Monitoring Results March 2014 to August 2014

Date	Time	Sampler	Location	Pump Rate (kL/hour)	Time Pumped (hours)	Volume (kL)	pH	Visible Oil Sheen (Y/N)	Comments
13/06/2014	8:00am	Simon Kinvig	Transformer Bund	60	1	60	7.6	N	Water is clear
13/06/2014	10:35am	Simon Kinvig	Transformer Bund	60	1	60	7.1	N	Water is clear
5/06/2014	7:30am	Simon Kinvig	Transformer Bund	60	0.5	30	7.69	N	Water is clear
28/07/2014	7:30am	Simon Kinvig	Transformer Bund	60	0.13	8	7.01	N	Water is clear
18/08/2014	1:00pm	Simon Kinvig	Transformer Bund	60	0.6	6	7.4	N	Water is clear
19/08/2014	10:00am	Simon Kinvig	Transformer Bund	60	0.6	6	7.65	N	Water is clear
27/08/2014	7:30am	Simon Kinvig	Transformer Bund	60	0.75	45	8	N	
28/08/2014	7:30am	Simon Kinvig	Transformer Bund	60	2	120	7.2	N	
28/08/2014	9:30am	Simon Kinvig	Transformer Bund	60	1	60	7.3	N	

Table B1.8 Hydrostatic Test Water Quality Results – March 2014

Analyte	Units	LOR	Adopted Thresholds (OSBL)	March 2014 Sampling Results (HWC Meter - Potable Water)
General Parameters				
Electrical Conductivity	µS/cm	1	1600	242
Total Dissolved Solids	mg/L	10	850	126
Total Suspended Solids (	mg/L	5	1000	<5
Cations (filtered)				
Calcium	mg/L	1	N/A	13
Magnesium	mg/L	1	N/A	5
Sodium	mg/L	1	N/A	3
Potassium	mg/L	1	N/A	26
Anions				
Total Alkalinity as CaCO3	mg/L	1	N/A	16
Chloride	mg/L	1	N/A	36
Fluoride	mg/L	0.1	3.5	1
Sulfate	mg/L	1	250	30
Dissolved Metals				
Copper	mg/L	0.001	0.02	0.017
Nickel	mg/L	0.001	0.02	<0.001
Iron	mg/L	0.05	19	0.14

Notes:

1. ANZECC (2000) Fresh Water Ecosystem Trigger Values for 95% Species Protection (no marine trigger value)
2. NHMRC (2011) Drinking Water Guidelines (Health)
3. ANZECC Indicative Interim Working Level (IIWL) – Low Reliability Trigger Values
4. NHMRC (2011) Drinking Water Guidelines (Aesthetic)

LOR - laboratory limit of reporting

Value	Within 1.1 times threshold concentrations
Value	Greater than 1.1 and up to 2.5 times threshold concentrations
Value	Greater than 2.5 and up to10 times threshold concentrations
Value	Greater than 10 times threshold concentrations

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